

## Commercial Refrigeration

### Virginia Smelting Men Attend Conference

(Concluded from Page 1, Column 2)  
heads: A. H. Eustis, president; F. A. Eustis, secretary-treasurer; C. W. Johnston, A. K. Scribner, Robert LeBaron, W. P. Hilton, and R. H. Israel.

Members of the sales staff present included: G. A. Anderson, New York City; W. B. Arbuckle, Houston, Tex.; F. W. Binns, Boston; W. C. Dever, Detroit; J. R. Eldridge, New York City; E. V. Dunbar, Atlanta; R. D. Malcolm, Boston; and D. E. Williamson, New York City.

Sessions dealing with refrigerant gases were under the leadership of Mr. LeBaron, and those on commercial gases under the direction of Mr. Scribner. Foreign sales were discussed under the leadership of Miss L. J. Hitch, in charge of export.

A morning session was devoted to advertising and sales promotion problems, with Mr. Israel giving a demonstration of the 1939 sales promotion campaign. Philbrook Cushing of Harold Cabot & Co., Inc., Boston, advertising counsel for the company, was present for the discussion of advertising and publicity.

### F. E. Wilson Joins Staff Of Brunner Mfg. Co.

(Concluded from Page 1, Column 1)  
representatives throughout the country on both refrigeration and air-conditioning equipment. He also will handle special assignments.

A veteran refrigeration man, Mr. Wilson spent 21 years with Merchant & Evans, Philadelphia, in various capacities, the last seven of them as sales manager for the M & E commercial refrigeration division.

In that position, he was in charge of the entire sales and advertising program, and was responsible for the reorganization of sales activities from household to commercial and air-conditioning condensing units.

### Continued Call-Backs Keep Getting Sales

RALEIGH, N. C.—P. O. Stahl of General Appliance Co. here, has a healthy respect for the value of follow-ups and repeat calls. This respect was not at all tarnished by his recent experience with the Orange Crush Bottling Co.

Mr. Stahl set out to sell this company a 15-hp. compressor for a water-cooling job in its Greenville, S. C. plant. He did just that. At this point the average salesman might have been inclined to rest on his laurels, but not Mr. Stahl. For him it was only the beginning.

Calling again on the Orange Crush company, Mr. Stahl found that the firm could use a refrigerating unit to hold syrup samples at 40° F. in a small storage room. So he sold a ½-hp. condensing unit for this application.

Not satisfied with this, Mr. Stahl dropped in one day for a visit with the owner of the plant, and came out with an order for a portable air-conditioning unit to be installed in the man's home.

This would seem to be the logical conclusion to this story, but apparently Mr. Stahl was just leading his victim on. For after letting him enjoy the comforts of a conditioned home for a while, Mr. Stahl executed one final coup—he sold the owner a complete air-conditioning system (including a 3-hp. condensing unit and a York conditioner) for the company's offices.

### Refrigerating System Put In For Dried Milk

CORAL, Mich.—Coral Creamery, Inc. has purchased the C. A. Baldwin potato warehouse to provide added storage room for its dried milk product, and has rented warehouse space to Cedar Springs Creamery and Lansing Dairy Co. New refrigeration equipment has been installed.

### Dr. East To Address Detroit Engineers

DETROIT—Dr. Bion R. East, technical consultant of Vitex Laboratories, Inc., Harrison, N. J., will talk on "Dairy Refrigeration and Its Relation to Public Health" at the November meeting of the Detroit section of American Society of Refrigerating Engineers, to be held at 7 p.m. Nov. 15 in the offices of the NEWS. F. M. Cockrell is chairman of the meeting.

Dr. East, a former resident of Detroit and well known to the dental profession here, pioneered the introduction of Vitamin D in milk. In the course of his work with Vitex Laboratories, he has accumulated much information regarding the dairy laws of the various states, latest scientific investigations of food values, and new applications of refrigeration.

As a second feature of the program, M. W. Knight, sales manager of Peerless of America, Inc., will present a film showing latest developments in the Peerless method of manufacturing cooling coils for refrigeration and air conditioning. The educational meeting will be preceded by a dinner in the NEWS offices.

### Curnow's Opens Branch

SAN JOSE, Calif.—A new downtown branch store was opened at 203 S. 2nd St. by Curnow's, dealer in RCA-Victor radios and household appliances.

### 300 Sales Result of 'Bargain Day' Drive

(Concluded from Page 1, Column 3)  
by Indiana & Michigan Electric Co. in cooperation with five distributor firms.

Effectiveness of the campaign as a business booster may be gauged by the fact that on several separate days recently not one major appliance sale had been made in the city.

The "Bargain Day" was announced in a large newspaper advertisement on the Tuesday preceding the event. Thursday papers carried another large cooperative display, paid for by distributors, in addition to approximately 1,000 inches of advertising by individual dealers, featuring "bargain" specials.

Distributors cooperating in the event were: H. G. Bogart Co., Great Lakes Distributing Co., Radio Equipment Co., South Bend Electric Co., and Wayne Hardware Co.

### Tyler Opens New York Office & Warehouse

BOSTON—The Tyler Fixture Corp. has announced the opening of a branch office and warehouse at 683 Beacon St. here, under the supervision of Paul Jackel, New England divisional manager.

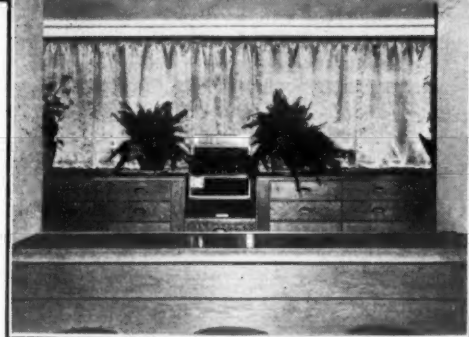
A complete line of Tyler equipment is displayed, and space has been leased to provide for the warehousing of Tyler display cases, reach-in boxes, walk-in coolers, and other Tyler equipment.

### Specialties Distributing To Sell Sherman Case

DETROIT—Specialties Distributing Co. has been appointed representative throughout the state of Michigan for the line of frosted food equipment manufactured by Charles Q. Sherman Co., New York City.

The Specialties organization will handle this line as a retail item.

### REX B. CLARK'S LAKE NORCONIAN HOTEL



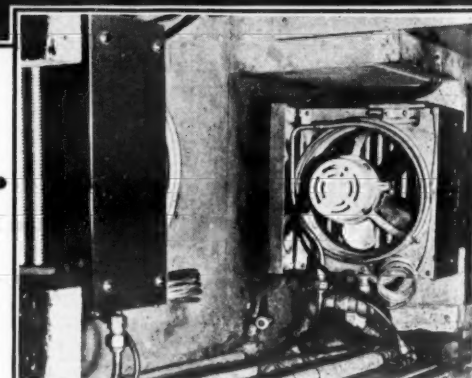
Lake Norconian Hotel Norco, California

The "Mystery Room" Lake Norconian Hotel

A-P Model 205 Thermostatic Expansion Valves used in The "Mystery Room"

Manufacturer — Refrigeration Engineering Company, Los Angeles, Calif.

Dealer — R. W. Weidlein, Los Angeles, Calif.



Rex B. Clark's Lake Norconian Hotel, nestled amid the beauty and grandeur of the Rockies, has a wealth of advantages, both natural and man-made, that give it rightful claim to "The Charm Center of the West." Among many clever innovations that please and interest guests is the famous "Mystery Bar."

Instead of the usual array of bottles and glasses on the backbar, these are all arranged in convenient drawers which are kept at a constant low temperature. Here, for the first

time, Refrigeration is used to keep glasses as well as liquor cold.

Refrigeration used is controlled by A-P Model 205 Thermostatic Expansion Valves.

The capillary tube on ALL A-P Thermostatic Expansion Valves is not sensitive to temperature changes.

### AUTOMATIC PRODUCTS COMPANY

2450 NORTH THIRTY-SECOND STREET MILWAUKEE WISCONSIN

Export Address: 100 Varick St., New York City

Refrigeration Parts Jobbers, Who Recognize Quality, Stock Controls.

**DEPENDABLE**  
THE BYWORD FOR A-P VALVES

### New Appointees To Brunner Sales Staff



F. E. WILSON  
Special field sales representative, handling special assignments.



GEORGE W. MATHEWS  
Representative in northern Ohio, northern Indiana, and Michigan.



W. S. McLEOD  
He will cover the Cincinnati territory.



HOWARD T. NOONE  
Representative in the southeastern territory.



# Air Conditioning & Refrigeration News

The Newspaper of the Industry

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## THE COLD CANVASS

By B. T. Umore

### Flag Raising

Armistice Night in Mansfield is quite a thing. In company with some of Westinghouse's younger generation, Old B. T. U. witnessed an old-fashioned flag raising which had considerable eclat, not to mention aplomb.

Bands played, veterans marched, floats passed, and ambulances and hearses (appropriately enough) eased by. As the veterans swung by, a cane was raised in gesticulation. Gay gesticulator was V. E. "Sam" Vining, director of department store sales for Westinghouse, and radio-star-to-be (see story on page 1 of this issue).

Mr. Vining was waving at his wife, who later played a prominent part in the ceremony which was the climax of the celebration.

From various points on the compass, bands converged toward a central corner. Above them we noted a rope tightly stretched between two tall (for Mansfield) buildings.

As a former small-town, we thought we knew what to expect: a man in tights, armed with a fishing pole or a parasol, would teeter across, and the sum total of breaths held would inflate a small balloon.

But that wasn't it at all. Sirens screeched, a path was cleared by motorcycle cops, and the Mansfield fire department roared up and past. Last fire truck to appear on the scene stopped just underneath the rope. After a fanfare of trumpets, a ladder was raised, and a fireman went up—somewhat gingerly.

With him he took an enormous Red Cross flag, which he attached to the rope, as hundreds cheered.

### Air-Conditioned Flag

Significance of this event was the fact that the flag represented a signal achievement on the part of Mrs. Vining in her activities as local Red Cross organizer.

Richland County has won this flag three years in succession—thus gaining permanent possession—as a reward for showing the highest per capita Red Cross membership of any county in Ohio.

Around Mansfield the elsewhere famous "Sam" is known as "Mrs. Vining's husband."

What interested Old B. T. U. most was that the flag was air conditioned. A system of vents and ductwork has been cut into it. Inquiry revealed the information that these scientifically arranged vents allow the free passage of air, so that the flag will hang straight and not flap in the breeze or curl up on the rope.

Great discovery, air conditioning.

### Greek Letters

When Greek meets Greek, they start a restaurant. But Charles D'Olive, vice president in charge of the Crosley Corp.'s refrigeration department, is a Greek now, and so is his son; but they have no intention of going into the food service department.

Mississippi State, the alma mater of D'Olive senior, has just notified him of his election to Tau Beta Pi, national honorary engineering fraternity.

When Mr. D'Olive was a student, his marks placed him in the upper five per cent of his class; but at that time no chapter of Tau Beta Pi existed on the campus. But that matter has been rectified by the present chapter, which has extended him the right to wear the famous little gold key.

His son, a freshman at Dartmouth, (Concluded on Page 2, Column 4)

## Crosley Adds 3 Deluxe Models To Shelvador Line

CINCINNATI—Three new deluxe Crosley electric refrigerators, with food storage capacities of 4½, 5½, and 6½ cu. ft., are now being shown to dealers throughout the country by Crosley distributors and district managers.

Cabinets of the new models have been redesigned for new streamlining, and are of one-piece construction, electrically welded into one complete unit for greater strength. Insulation (rock wool) is sealed in. Hardware is chrome finished, of massive streamline design. Porcelain food compartment has an acid-resisting stainless bottom.

(Concluded on Page 16, Column 3)

## Vining To Give Sales Slants Over Radio

FT. WAYNE, Ind.—V. E. "Sam" Vining, director of department store sales for Westinghouse, went on the air over station WOWO here at 8:45 a.m. Tuesday, Nov. 15, central standard time, in the first of a series of six broadcasts to Westinghouse dealers and salesmen in this area.

Designed to be employed in morning sales meetings, Mr. Vining's programs will also interest prospects for Westinghouse appliances, it is hoped.

Billed as the "red suspenders philosopher," Mr. Vining reads during the course of his program, from the series of "Sam's Selling Slants."

(Concluded on Page 16, Column 5)

## Household Unit Sales Improve In Sept.

DETROIT—Showing further gains in comparison with corresponding 1937 figures, world shipments of household electric refrigerators by manufacturers to distributors and dealers totaled 75,800 units during September a decline of about 20% from last year's total for the month, according to estimates by the NEWS.

World sales in September, 1937 were 94,400 units. The 1938 total for the month, although still under previous year figures, nevertheless represents a percentage gain over August world sales. In that month, 105,400 units were reported, compared with 135,500 in the same month of 1937, a drop of about 23%.

August was the first month this year during which household refrigerator shipments showed totals comparable with corresponding 1937 marks.

World sales for the first three quarters of the year, however, still are about 43% down from the total

(Concluded on Page 16, Column 1)

## Air-Conditioning Dealers and Contractors To Organize National Association

Michigan Group Calls Preliminary Meeting In Detroit, Nov. 28

DETROIT—The Air Conditioning Association of Michigan, led by J. H. Keller of Mechanical Heat & Cold, Inc., Detroit, has issued a call for a preliminary meeting of air-conditioning dealers and contractors to be held in Detroit on Monday, Nov. 28, 1938, to make plans for the organization meeting of a national association in Chicago during January.

R. H. Gordon, American Refrigerating Co., is vice president, and H. C. LeVine, Atmospheric Control Corp., is secretary-treasurer of the Michigan association. Henry Knowlton, Jr. is recording secretary with head-

## Meeting In Chicago To Clarify Ideas On Conditioning

CHICAGO—Leaders in various branches of the air-conditioning industry will be speakers at a public symposium on "Air Conditioning for Human Comfort" to be held Tuesday night, Nov. 22, in the auditorium of the Western Society of Engineers, Wacker Drive and Wells St.

Purpose of the meeting is to clarify some of the current misconceptions about air conditioning and report new advances.

Symposium speakers will include Prof. Philip Drinker of Harvard university, Cambridge, Mass.; Willis H. Carrier of Carrier Corp.; Albert Buenger of Delco-Frigidaire Conditioning division, General Motors Corp.; Charles S. Leopold, Philadelphia consulting engineer; Elliott

(Concluded on Page 3, Column 1)

## Curtis Co. Introduces Unit Store Coolers

ST. LOUIS—Introduction of a self-contained unitary store conditioner, available in both 3 and 5-ton capacities, has been announced by the Curtis Refrigerating Machine Co.

The conditioner is semi-portable, as only water and electrical connections are necessary for installation.

The cabinet of the new Curtis unit is constructed of heavy gauge automobile steel, with an attractive silver

(Concluded on Page 3, Column 1)

## Cleveland Appliance Assn. Elects Officers

CLEVELAND—Gordon J. Agnew, manager of the appliance department of the Bing Co., was elected president of the Cleveland Appliance Association at the organization's annual meeting, held recently. Mr. Agnew succeeds Frank L. Grdina.

Victor G. Ptak of Ptak's Music Store was named vice president of the association, succeeding A. L. Kaufman of C. L. Kaufman & Son, who becomes secretary of the group.

E. W. Shaw, housewares buyer and appliance merchandiser for the May

(Concluded on Page 3, Column 2)

## Meter Test Shows Low Electric Cooking Cost

DETROIT—The low cost of electric cookery was effectively demonstrated at a "Discovery Demonstration," four-day cooking school conducted by Miss June Matuck, home economist of Westinghouse Electric & Mfg. Co., Nov. 8 through Nov. 11 at the J. L. Hudson Co.

A sealed meter was connected to

(Concluded on Page 2, Column 4)

## New York Utility Suggests New Pricing Policy on Refrigerators

### Dayton Dealers May Set Up a 'Special' Store For 'Excess' Merchandise

DAYTON, Ohio—Idea of establishing an "outlet store" through which both distributors and dealers might dispose of their excess appliances and other merchandise at special prices is being considered by the Gas & Electric League of Dayton, as a result of strenuous protests by dealers against the practice of some distributors in offering merchandise direct to consumers at wholesale prices.

Dealer opposition to distributors' selling direct to consumers reached a climax in a protest meeting held by a dozen retailers after a local distributor, in an effort to move certain products, advertised in Dayton newspapers direct to consumers, indicating a 50% reduction in regular retail prices.

As a result of the dealers' meeting, a strong letter of protest was sent to the offending distributor, and a copy sent to manufacturers. While the retailers were members of the Gas & Electric League, the protest action was taken by them as an individual group, and not as representatives of the dealer organization, it was said.

## Selling In Forefront At Servel Conclave

FRENCH LICK SPRINGS, Ind.—Important part which selling has played in building up the nation's great industries was emphasized by Louis Ruthenburg, president of Servel, Inc., in an address during the annual sales convention of company executives, department heads, and regional sales managers here Nov. 3 to 5.

Sales, advertising, and promotional program for 1939 Electrolux gas refrigerators was planned and discussed during the three-day conference.

"Attacks have been made on business, but what would our country be if it had not been for business enterprise?" asked Mr. Ruthenburg in his talk. "If there had been no

(Concluded on Page 16, Column 1)

## Armstrong Cork To Sell 'Polar Chest' Locker

LANCASTER, Pa.—Armstrong Cork Co. announced last week that it has been licensed to sell and install a new type of cold storage locker system designed for installation in the back rooms of meat markets and grocery stores. The license does not include the furnishing of refrigerating equipment.

The new system, known as the "Polar Chest Locker System," is covered in patents applied for by Roy W. Smith, Newark, Ohio, refrigeration and locker storage man. First installation of this kind was made in Weaver's Clover Farms Store at Washington Court House, Ohio.

Intended to open the way for the installation of locker storage plants in downtown shopping districts, the system dispenses with refrigerated space for aisles or overhead coils, enabling customers to have access to their lockers in a room of normal temperature. Lockers themselves are out of sight below floor level, and are raised, elevator-like, as needed.

Advantage of having food storage lockers located in a downtown meat market or grocery, it is said, is that

(Concluded on Page 3, Column 1)

### Dealers Back Plan of Establishing a 'List' Wholesale Price

NEW YORK CITY—In an effort to stabilize the electric refrigerator merchandising situation in this territory, Consolidated Edison Co. of New York, Inc., at the request of dealer associations in the metropolitan area, last week sent to manufacturers and local distributors a letter listing a number of suggested improvements in sales practices and policies.

The letter, sent out by E. F. Jeffe, the utility's vice president in charge of sales, was accompanied by a petition signed by cooperating electric refrigerator dealers, in which the suggested improvements were outlined in detail.

Also included was a copy of a new plan, designed to allow for complete dealer participation in sales of Electrolux gas refrigerators, which Consolidated Edison has submitted to all its cooperating dealers in its capacity as Electrolux distributor here.

The plan is regarded as a sort of model which electric refrigerator distributors might follow as a means of quieting dealer dissatisfaction with the current merchandising situation.

Both the sales plan and the suggested changes in merchandising policies outlined in the dealers' petition were formulated by Mr. Jeffe as an outgrowth of a conference with a committee representing the dealers group of the Electrical & Gas Association of New York, Inc., Electrical Appliance Dealers Association of Brooklyn, and the Electrical Merchant's Association of Queens, Inc., held for the purpose of enlisting the aid of the utilities, the manufacturers, and the distributors in improving conditions for dealers.

At a second meeting, to which all automatic refrigerator distributors, dealer representatives, and utility company representatives were invited, a committee of distributors was appointed to investigate and report on the matter of trade-in abuses, dealer participation in wholesale sales, and the like, and manufacturers and distributors were asked to submit suggestions or a completed plan to correct whatever differences were not ironed out on the spot, and to put it into effect no later than Dec. 1 this year.

Pending a report from the distributors' committee, Mr. Jeffe submitted a list of suggestions which included recommendations that:

(1)—Promotional activities be centered on automatic refrigerators of 5-cu. ft. capacity and greater.

(2)—List prices be established which would be adhered to both as to "retail" sales and as to "wholesale" sales.

(3)—Refrigerator prices to dealers be lower than the wholesale list price, and thereby (4)—the dealers would be permitted to make "wholesale" sales as well as "retail" sales.

(5)—The differential between

(Concluded on Page 16, Column 2)

## Distributor Meeting Delayed By S-W

CHICAGO—Stewart-Warner Corp.'s 1939 distributor convention, originally scheduled for the Edgewater Beach hotel here Nov. 28 to 30, has been postponed indefinitely, according to John F. Ditzell, sales manager of the company's radio and appliance division.

Introduction of a new line of electric ranges and 1939 electric refrigerator models will be made at the convention, definite dates of which will be announced later.



## Owens, Corning Form Company To Produce 'Fiberglas' Products

TOLEDO—Formation of Owens-Corning Fiberglas Corp., an independent corporate structure financed jointly by Owens-Illinois Glass Co. and Corning Glass Works for the production of various fiber glass products and continuation of research and development in this field, has been announced by Amory Houghton, chairman of the board of the new company, and Harold Boeschstein, president.

Owens-Corning Fiberglas Corp. will not operate as a subsidiary of either parent company. No stock will be offered to the public, however, all financing being subscribed by the joint owners. Both parent companies have a long history in the glass industry, that of the Corning firm dating back to 1851, and that of Owens-Illinois to 1873.

In announcing formation of the new firm, Mr. Boeschstein told of the slow, painstaking development of fiber glass and of the hundreds of laboratory tests and experiments in the past three years which have made the new material possible.

Glass suitable for other purposes, he pointed out, was found to be unsuited for drawing and spinning into fine threads for electrical insulation and glass fabrics, such as insulating tapes and chemical filter cloths. A new type of glass is now being drawn, he declared, into fibers two ten-thousandths of an inch thick, and may be drawn finer—finer, even, than any organic fiber.

### USE IN THIS INDUSTRY

"One of the first applications of this material was in air filters for heating and air-conditioning systems," Mr. Boeschstein explained. "Fiber glass made possible the first efficient, low-cost filters of this type, and since has played a part in the growth of the air-conditioning industry."

"Fiber glass soon was found to provide insulation against both temperature and sound, and in this capacity was used as pipe covering on high temperature and refrigeration lines, and in construction of refrigerators, electric motors, steam turbines, stoves, residences, and airplanes."

### DEPRESSION BORN

"The applications of this new product representing the pioneering efforts of Owens-Illinois Glass Co. and Corning Glass Works working cooperatively on research and development, have made possible an entire new industry," Mr. Boeschstein declared. "It is, in every respect, a depression-born industry, the basic idea having been conceived, the vast amount of experimental work carried through, and the necessary machinery and processes perfected in the last seven years."

"By merging their efforts in a

## Men Behind Fiber Glass Development



When Owens-Corning Fiberglas Corp. was formed recently for the production of various fiber glass products and continuation of research and development in this field, Harold Boeschstein (left), resigned as vice president and general manager of Owens-Illinois Glass Co. to accept the presidency of the new company. Amory Houghton (right), president of Corning Glass Works, is chairman of the board of the new concern.

single jointly owned company, both parent companies are convinced that a more economical development of the various present and potential products will be possible, and that broader applications of fiber glass will be devised."

Although stating that about \$5,000,000 already has been spent by Corning and Owens-Illinois in development work alone, Mr. Boeschstein declared: "We believe we are only at the beginning in developing new applications of fiber glass, but production on many products is now under way at the company's plants at Newark, Ohio and Corning, N. Y." All products and processes, he said, are protected by basic patents.

Mr. Houghton, board chairman of the Fiberglas firm, also is president of Corning Glass Works. Mr. Boeschstein resigned as vice president and general manager of Owens-Illinois Glass Co. to head the new organization. All officers and board members of the new company were recruited from the executive personnel of the two parent concerns.

Vice president, Games Slayter, who is credited with having played the major part in the development of the new basic product; vice president in charge of manufacturing and sales, W. P. Zimmerman, formerly general manager of industrial products division of Owens-Illinois; general sales manager, G. E. Gregory, former sales manager of fiber glass products of Corning; secretary, A. C. Freligh, formerly comptroller of fiber glass products of Corning; comptroller, H. R. Winkle, formerly assistant comptroller of Owens-Illinois.

## Nema Commercial Sales Down In September

DETROIT—Sales of commercial refrigeration and air-conditioning equipment by manufacturer-members of the Commercial Refrigeration Section of National Electrical Manufacturers Association to distributors and dealers during September totaled 8,970 units, according to reports by 14 companies to Nema headquarters.

This compares with a total of 11,616 units reported sold by 15 manufacturers who reported to Nema's Commercial Refrigeration Section during the corresponding period of 1937. Shipments of commercial refrigeration and air-conditioning equipment by Nema members during August totaled 14,114 units.

Shipments of self-contained air conditioners continued as the only equipment to run ahead of corresponding 1937 marks. September's total in this classification was 792 units, of which 673 were of the air-cooled type.

Ice cream cabinet shipments this September totaled 1,106 units, as compared with 2,639 in the same month of 1937.

Shipments of commercial condensing units during the month amounted to 5,170 units, against a total of 6,695 units in the same month last year. Total dollar volume of commercial and air-conditioning shipments was \$1,579,014 for this September, compared with \$1,720,121 in the corresponding period of 1937.

Total dollar volume of shipments was \$1,579,014.

## THE COLD CANVASS

By B. T. Umer

(Concluded from Page 1, Column 1) has been pledged to Sigma Alpha Epsilon, national social fraternity.

## A Thanksgiving Turkey Saved For Christmas

G. E. Graff, sales manager for Ranco, Inc., does a considerable amount of experimental work with household refrigerator control systems right in his own home. He has three different types of household refrigerators in his own kitchen on which he works.

For some time now Mr. Graff has been an ardent disciple of frozen foods, which he finds are both better in quality, and in the long run, cheaper than fresh meats and vegetables. One of his household refrigerators has a frozen-storage compartment with a bushel capacity.

His best and most convincing story about frozen foods is that of a fresh-dressed turkey, purchased for Thanksgiving, but which was relegated to the freezer compartment when an invitation to go out for Thanksgiving dinner came along. The bird remained in the freezer until it was taken out and cooked for Christmas dinner, at which time it was most delectable, Mr. Graff declares.

## More Definitions

In Malcolm Bingay's column of the Detroit Free Press we find this: "Socialism means that if you have two cows, you give one to your neighbor. Under Communism you give both cows to the Government, which gives you back some of the milk. Under Fascism you keep the cows but give the milk to the Government, which sells you some of it back. And under New Dealism you shoot one cow, milk the other, and then pour the milk down the sink!"

## Who's Stupid?

"If federal spending could cure depressions, we should be trying to hold down a boom today. Never before in the history of the world has money been dissipated so lavishly as during the past five years, only to end in another depression. The whole spending program has been a dismal failure economically, industrially, and commercially. It has been more successful politically than in any other way. Perhaps those people in Washington are not so stupid as we think! It may be the people who take pump priming seriously who are the stupid ones. The administration may not have lost its rudder after all."—From the Convocation Address by George Barton Cutten, president of Colgate university, Sept. 21, 1938.

## Clark Joins Square D Regulator Division

DETROIT—George H. Clark has joined the regulator division of Square D Co. here to assist in the development and promotion of refrigeration and air-conditioning devices.

A graduate mechanical engineer, Mr. Clark has had practical experience in refrigeration and air conditioning with Copeland Products Co., Detroit Lubricator Co., Mercier & Clark, Inc., refrigeration service, and has taught at the Detroit School of Refrigeration & Air Conditioning.

## Low Cost of Electric Cooking Demonstrated

(Concluded from Page 1, Column 3) the Westinghouse range used by Miss Matuck at the first three sessions, during which she prepared three complete meals for four people each day. At the fourth session the meter was unsealed, and after figuring the costs, it was announced that the cost of preparing the nine meals for four people had been 22.7 cents.

Westinghouse awarded six-month

## Penn Switch Appointees



A. W. BARR



D. A. COON



A. L. RUBEL

## Penn Changes Heads Of Branch Offices

GOSHEN, Ind.—A number of recent changes in branch office personnel, and the addition of one new branch office, have been announced by R. H. Luscombe, sales manager of Penn Electric Switch Co.

A. W. Barr, who has been associated with the automatic control industry for a number of years, has been named manager of the company's Boston office.

A. L. Rubel, who has been manager of Penn Electric Switch Co.'s Boston office since it was opened in 1933, has been transferred to take charge of the company's Philadelphia office, opened last spring.

D. A. Coon, who opened the Philadelphia branch office, has been placed in charge of the new branch opened in St. Louis in September. For three years Mr. Coon served as a sales engineer on the staff of the company's New York City office, and prior to that time was engaged in heat accessories sales work.

subscriptions to its "Table Talk" home economics leaflet to the 27 women whose guesses were nearest to the correct figure. Many women entered the contest, and the estimates of the cost of preparing the meals ranged from 20 cents to \$5.55.

Miss Matuck also demonstrated other Westinghouse electrical appliances, and her final program was devoted largely to preparing foods in the Westinghouse electric roaster. A complete meal can be cooked in the roaster, which includes a baking rack, broiler rack, and glass baking dishes, Miss Matuck told her listeners.

# Announcing the New CURTIS Store and Office Cooler

a new Money-Maker for you!

● The new Store and Office Cooler is the latest addition to the Curtis line of air conditioning and refrigeration equipment. It is a complete, packaged air conditioning unit, factory designed and engineered—cools, dehumidifies, circulates and filters and is adaptable for heating too. It's semi-portable, requiring only water and electrical connections, and makes economical, dependable cooling available for all types of business. Available in 3 and 5 ton sizes.

Thus the Curtis line becomes more complete than ever with the Store and Office Cooler, giving Curtis dealers an even wider opportunity for greater sales and profits. You can cover the field with Curtis equipment—Curtis experience and Curtis engineering assure user satisfaction and freedom from service expense.

Write to Curtis for details today.

**Curtis Refrigerating Machine Co.**

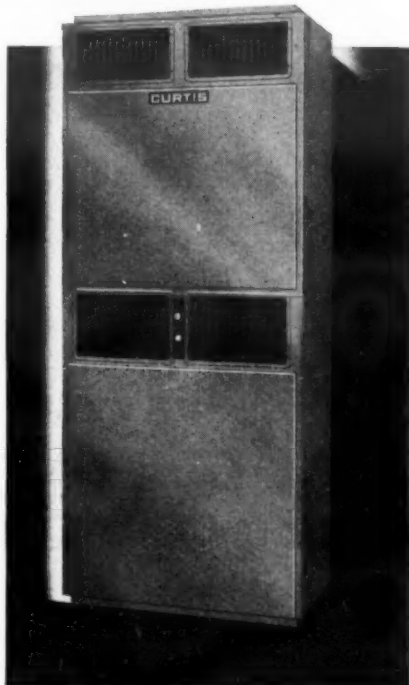
Division of Curtis Manufacturing Co.

1912 Kienlen Ave.

St. Louis, Mo.



"Builders of Condensing Units Since 1922"





## Chicago Symposium To Discuss Developments In Air Conditioning

(Concluded from Page 1, Column 3)  
Harrington of General Electric Co.; John R. Hertzler of York Ice Machinery Corp.; and William B. Henderson of Air Conditioning Manufacturers' Association.

With John Howatt, past president of American Society of Heating & Ventilating Engineers and chairman of the Chicago Committee on Air Conditioning presiding, subjects to be covered will include:

The health aspects of air conditioning; a layman's description of air conditioning; its history and influence on health and progress; air-conditioning standards and engineering problems; installation and insulation methods; operating costs; cooling and heating phases; and research and development of equipment.

## Dial Control Used In Compact Curtis Cooler

(Concluded from Page 1, Column 3)  
Hammerlaid finish, or can be furnished with a flat, prime coat which will take any matching color.

Special insulating and sound absorbing material is used for lining, giving quiet, efficient operation at all times.

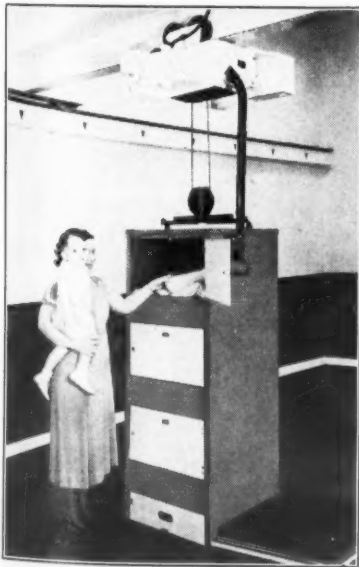
Complete control of operation is accomplished by two small dials on the front of the cabinet. Occupying only 5½ square feet of floor space, the unit cools, dehumidifies, circulates, and filters the air. Heating coils may be adapted for year-around use.

## New Type of Locker Rises Out of Floor

(Concluded from Page 1, Column 4)  
the customer can visit the locker to obtain frozen meats, vegetables, or out-of-season fruits at the same time that the regular groceries and supplies are purchased.

Lockers have a content of about

## 'Elevator' Locker



In the "Polar Chest" locker system a patron opens the door in the floor, and the tier of lockers can then be raised to any desired distance above the floor level so that the patron can reach into one of the 6-cu. ft. compartments conveniently. Room into which the locker is raised is at normal temperature.

6 cu. ft., considered sufficient for the needs of the average family.

"Polar Chest" systems are not designed to replace the conventional type locker storage plant, it was said, but rather to popularize the locker storage idea by making such service available to the great mass of consumers.

## Stewart-Warner Reports Third Quarter Loss

CHICAGO—Net loss of \$145,579 for the three months ended Sept. 30 is reported by Stewart-Warner Corp. Net income for the same period last year was \$542,625.

## Air-Conditioning Dealers To Organize Nationally

(Concluded from Page 1, Column 3)  
and contractors association has developed to the point where some kind of concerted action seems advisable, an organization meeting has been scheduled for the week of Jan. 16-19, in connection with the All-Industry Refrigeration and Air Conditioning Exhibition at the Stevens hotel in Chicago, when industry leaders from all parts of the country will be in attendance.

"It has been suggested that the Chicago meeting will be more interesting and successful if a preliminary meeting were held to discuss informally the problems which will undoubtedly come up for discussion at the organization meeting in Chicago. Perhaps some data should be prepared in advance or other plans made for the January meeting. In any event plans should be made to promote attendance by giving the meeting adequate publicity.

"Because many problems which confront the industry are national in scope, industry leaders in many parts of the country have indicated a desire to see an organization established which is capable of formulating policies of value to all firms in the industry.

"A. J. Rummel, secretary of the Air Conditioning Bureau of San Antonio, Texas, reflects the feeling of many men in the industry, when he says:

"I do feel . . . that the formation of a central clearing house for industry information, experience, and policy should be of considerable interest and benefit to those men who have a financial stake in the air-conditioning business."

"E. S. Hildreth, secretary of the Air Conditioning Council of Indianapolis, reports that:

"The news of your activity was received with considerable interest and steps were taken to plan for at least one representative from our council to attend the Detroit meeting."

"M. A. Thesmacher, president of the Air Conditioning Association of Cleveland, sums up the position of the contractor when he says:

"We are assuming that a (national) association would be made up of contractors for the installation of equipment. . . . If you succeed in having a group meeting sometime this fall, I believe that we could arrange to have one or two representatives from our association attend."

"F. M. Cockrell, publisher of AIR CONDITIONING & REFRIGERATION NEWS, has offered the use of the publication's offices at 5229 Cass Ave., Detroit, and will take the responsibility of calling a preliminary meeting for Monday, Nov. 28, 1938, if a number of industry leaders are interested in attending such a meeting.

"Mr. Cockrell gave assistance of this kind to manufacturers of electric refrigeration before the Refrigeration Division of the National Electrical Manufacturers Association was organized, and also to industry groups which have since become the Refrigeration Supply and Parts Manufacturers Association and the Refrigeration Supply Jobbers Association.

"Stating his position in association matters, Mr. Cockrell says that:

"The NEWS is not interested in directing the affairs of any association, but will be glad to give the plan publicity and make the necessary arrangements until an organization has been formed and officers have been elected."

"If you are interested in the proposed association and favor this proposed preliminary meeting in Detroit, please indicate your desire to attend by returning the enclosed card."

## Cleveland Dealer Assn. Maps 1939 Program

(Concluded from Page 1, Column 3)  
Co., was elected treasurer, succeeding Frank King.

The word "retail" has been deleted from the association's official name, and a schedule of joint merchandising activities supplements the trade practice regulations which the organization has been endeavoring to establish in the industry here.

## N. J. Fair Trade Act Not Affected By Ruling

NEWARK, N. J.—Recent ruling of Bergen County District Court Judge Vorsanger declaring the so-called New Jersey "fair sales act" unconstitutional does not affect legality of the state's Fair Trade Act, which has been in effect here for some time. The Fair Trade Act makes legal a contract between the manufacturer or wholesaler and a retailer, requir-

ing the retailer to resell the merchandise at a price stipulated by the manufacturer or wholesaler, it is pointed out. The "fair sales act" was designed to legalize below-cost sales of all retail merchandise.

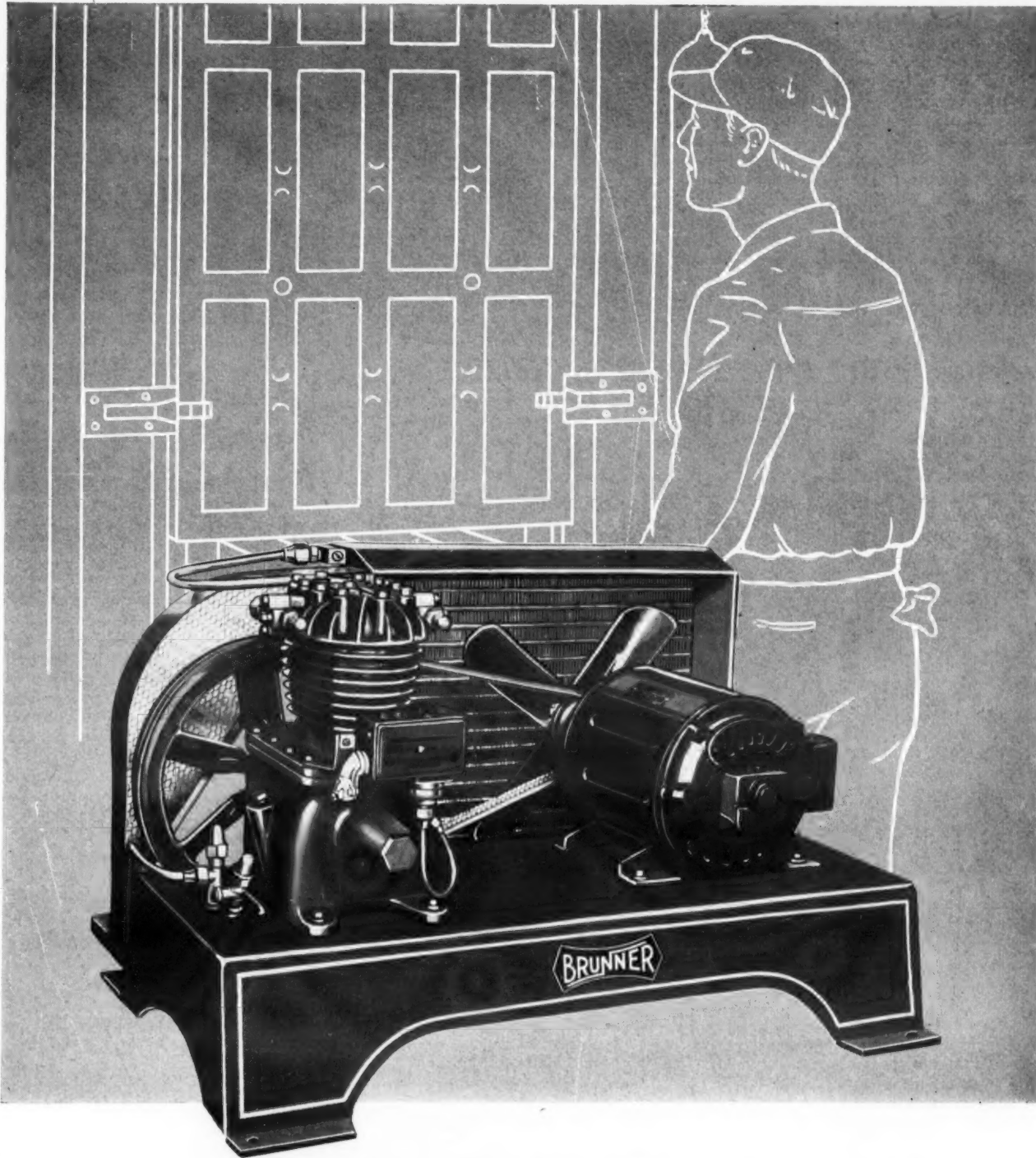
## Celotex Names Rautenberg

BOSTON—Appointment of Ernest C. Rautenberg as manager of the Boston branch of Celotex Corp. has been announced by J. Z. Hollman, general sales manager of the company.

## Ramsey Heads G-E's Boston Appliance Division

BOSTON — James A. Ramsey, manager for the past six years of the General Electric appliance and merchandise department in Buffalo, has been appointed district manager of General Electric Co.'s appliance division here. Mr. Ramsey formerly was district supervisor of G-E radio sales in Boston.

G-E's Buffalo and Boston districts have been combined.



## MEAN TO SAY THEY'RE ACTUALLY "BAKED" AS A MOISTURE PRECAUTION?

Moisture, trapped in the condensing system, raises havoc! Brunner engineers have found it to be one of the major causes of premature trouble and repairs. How can it be overcome? Very easily, with the Brunner method of assembly. For, before the finished unit is sealed, it is subjected to thorough dehydration in a specially constructed oven. Yes, every Brunner condensing unit is safely "baked" before going into service. It comes out thoroughly dry, and free from dangerous foreign material. It's attention to detail, like this, that makes the Brunner line so popular among careful buyers. Better study over Brunner dollar-saving features today! The Brunner line includes Refrigerating and Air Conditioning equipment, air and water cooled, for all types of installations from ¼ to 15 H. P. Brunner Manufacturing Company, Utica, N. Y., U. S. A.

IT'S **BRUNNER** FOR *economical* SERVICE



## Commercial Refrigeration

### Reconditioned System Fitted With New Accessories Cuts Operating Costs

SAN FRANCISCO—Average decrease of 40% in running time, and a similar decrease in operating cost, has been effected through the reconditioning of a refrigerating system using five compressors, together with the installation of an evaporative condenser, and operating in a soda fountain and creamery in an inland California town, reports Pacific Metals Co., Ltd., West Coast jobber which supplied the equipment used in the work.

The system was built by Estes Electric Co. of San Francisco for Bay Cities Refrigeration Co., which handled the installation.

#### HANDLES VARIETY OF JOBS

Temperatures of 100° F. and above are not uncommon in the locality in which the system is installed, and the refrigerating system has a big cooling load, including a five-gallon ice cream freezer, a 100-gallon hardening cabinet, service cabinet and salad pan, fountain with sweet water bath, and a novelty box.

The five compressors, Kelvinator units of which three are 1½ hp., one ½ hp., and the other ⅓ hp., had been in service in the fountain-creamery, but under conditions which made for an average room temperature of 95° F. and average head pressures up to 145 lbs.

#### HEAD PRESSURES REDUCED

In the new installation, with the compressors all completely reconditioned, and the evaporative condenser installed, head pressures averaged 65 to 75 lbs., as compared with previous head pressures of 145 lbs. or more, which caused leaks and other complaints which created a service problem. Methyl chloride still is used as the refrigerant.

In addition to cutting down the average running time of all units about 40%, noise and vibration have been almost eliminated in the new installation, it is claimed.

The units were mounted on two "T" beams, with new individual receivers of capacity sufficient to permit pumping down of each unit mounted in the channel of one of the "T" beam base girders.

Gas-cooled heads were substituted on each compressor for the original air-cooling arrangement. Gauges on both high and low sides were permanently installed on each unit, and inter-connecting fittings and valves permit the immediate manual transfer of any of the load units to another plant in the event of a failure of any of the refrigerating units.

A single unit, multiple pass Wichita evaporative condenser of the latest type, handles the entire installation with a consumption of approximately two gallons of water a day. Blower and water pump motor of this unit are automatically started coincidentally with the starting of any of the five refrigeration units.

#### SAFETY FITTING

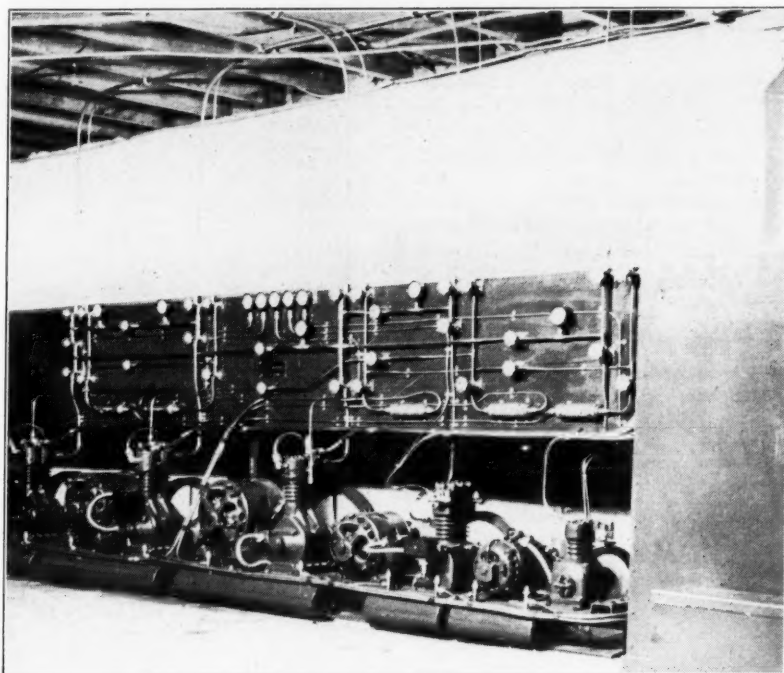
A safety fitting provides automatic transfer of feed of the water direct from the mains, upon build-up of gas pressure to a predetermined setting, thereby taking care of any failure of the water pump.

Imperial Brass Mfg. Co. combination dryers and strainers, steamline solder fittings, and valves are used in the system. A new "AP" automatic expansion valve is installed in the novelty cabinet.

Motor pulleys smaller than standard are used on all the refrigerating units. This easing of the load, coupled with the reduced head pressure and the fact that periods of 30 to 40 minutes exist during which no unit is in operation, has reduced power consumption by about 40%.

Condenser, fittings, valves, gauges, and other supplies used in the system were supplied by the San Francisco branch of Pacific Metals Co., Ltd.

### Looks and Acts Like New



This new setup, representing a reconditioned refrigeration system in which five condensing units are used, cut refrigeration costs nearly 40% for a California creamery. The system was constructed by the Estes Electric Co. of San Francisco, for the Bay Cities Refrigeration Co., which handled the installation. Pacific Metals Co., Ltd., supplied the equipment.

### Holbert Co. To Handle Kelvinator Commercial Line In Oklahoma

TULSA, Okla.—Holbert Electric Co., 121 W. Eighth St., has been named distributor for Kelvinator commercial refrigeration and year-around air-conditioning equipment. Coverage of 22 counties was given for air-conditioning and heating equipment, and 13 counties for commercial refrigeration, beverage coolers, and residential air conditioning. Personnel of the Holbert company includes: G. R. Holbert, manager; W. H. Kretz, engineer; Al Gosset, salesman; and T. T. Gillette, service manager.

### Pocket-Size Catalog Gives Data on Larkin Products

ATLANTA—A pocket-size 32-page catalog designed for use by jobbers, salesmen, and distributors has recently been issued by Larkin Coils, Inc. here.

Illustrated with cut-out drawings to show location of various types of equipment, the catalog lists specifications and prices of coils for walk-in coolers, side-icer coolers, grocery boxes, back bunker top display case units, full-length coils for top display and freezer cases, full-length case coils with single row of tubing, and bare tube coils.

Also described and illustrated in the catalog are disseminator pan and coil combinations, disseminator pans only, vacuum plate coils, "Icy Rapids" liquid coolers, forced-air "Humi-Temp" units, and expansion valves.

### VIRGINIA QUALITY REFRIGERANTS

- EXTRA DRY ESOTOO
- V-METH-L
- METHYLENE CHLORIDE

VIRGINIA SMELTING CO.  
W. NORFOLK, VA.

### For Product Cooling..

## MARLO UNIT COOLERS

Designed especially for Walk-in Refrigerators, 34 degrees and over, these Units can also be used for Air Conditioning.

The Coil Cores in Marlo Unit Coolers are Headered, and the Tubing proportioned in Circuits that eliminates any short circuiting of the Refrigerants and insures an even Coil temperature.

Housings are made of Aluminum two-piece Castings.

Fan Motor, Fan and Coil Cores are easily removed for inspection if necessary.

All Marlo Unit Coolers are conservatively rated.

Send for Complete Information and Literature.

MARLO COIL CO., 6135 Manchester Ave., St. Louis, Mo.  
Manufacturers of Complete Line of Low Side Equipment

### Lincoln, Neb. Druggist To Give Frozen Food Retailing a Trial

LINCOLN, Neb.—An experiment with the sale of frozen foods in a neighborhood drug store is being launched by Don Mattison, who operates the Bradfield Drug Co. here.

The experiment entails the installation of a six-compartment Frigidaire floor case, such as is commonly used for ice cream and similar frozen confections. The case has no display facilities, but is being installed in a prominent location in the store. Direct-mail and newspaper advertising will be used, along with an intensive sales drive by store employees. A neon sign stating that "Coryell 70 Frozen Foods" are on sale at the drug store has been installed on the store's facade.

"I intend to give frozen foods a fair trial, and I believe that it is a potential money-maker for stores such as ours," Mr. Mattison declared. "Our location is extremely important as a factor influencing the success of the experiment; we are in an exclusive residential section, where price of the products will not be a major issue."

#### FRUITS AND STEW

"To begin with we will carry frozen fruits, including strawberries, raspberries, peaches, and cherries, along with frozen beef stew and oyster stew," he continued. "Many of the residents of our neighborhood already have indicated they would appreciate being able to purchase such foods handily, especially for Sunday night meals."

"We also expect to put in a line of fresh-drawn poultry, eggs, and butter, inasmuch as our store is now a headquarters for milk," Mr. Mattison said. "Many of our neighborhood customers now drop into the store for milk in the evenings, and they have repeatedly voiced the wish that we carried something for evening meals and midnight lunches, in addition to our regular fountain dishes."

The frozen foods to be handled at the Bradfield drug store are manufactured by the Coryell Food Center of Lincoln, which went into production about a year ago, and now is furnishing such foods to a number of Lincoln's "quality" groceries and markets, as well as to hotels.

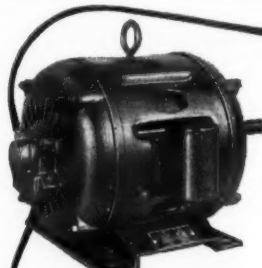
#### AIR CONDITIONED, TOO

The Bradfield store was recently remodeled, and is now one of the best equipped and most modern drug stores in the state, with a new air-conditioning system.

Refrigerating equipment for frozen foods at the drug store is being installed at the expense of the Coryell company, as part of a promotional campaign to popularize frozen foods in Nebraska. If the experiment proves successful, as both Mr. Mattison and L. L. Coryell, president of the company bearing his name, believe it will, the drug store plans to purchase a larger refrigerator case.

### Wands, Inc. Moves To Larger Quarters

NEW ORLEANS—Wands, Inc., Frigidaire dealer, has opened new and larger quarters at 1070 St. Charles Ave. here. Thomas H. Hill is president of the company, which formerly was located at 1530 St. Charles St. In addition to refrigerators, the company also is showing beverage and water coolers, ice cream cabinets, frosted foods cases, and Hussmann and Tyler display cases.



*Restating the Facts  
About Wagner Motors  
That Make Them Beneficial  
To Your Air Conditioning Installations*

✓ **SUPERIOR PERFORMANCE** characteristics are the result of careful design, and precision in manufacture. Wagner motors meet the exacting requirements of your air conditioning apparatus since they are available in a wide range of designs with excellent performance characteristics, such as high starting torque, low starting current, high over-load torque, smooth running operation, etc.

✓ **DEPENDABLE AND SATISFACTORY OPERATION** means that a motor will operate quietly and smoothly for a great many years without failure. The dependable and satisfactory operation for which Wagner motors are recognized as outstanding by the air conditioning industry results from 47 years of practical application, careful research, and intelligent engineering to secure the combination of factors that make Wagner motors superior to other motor designs.

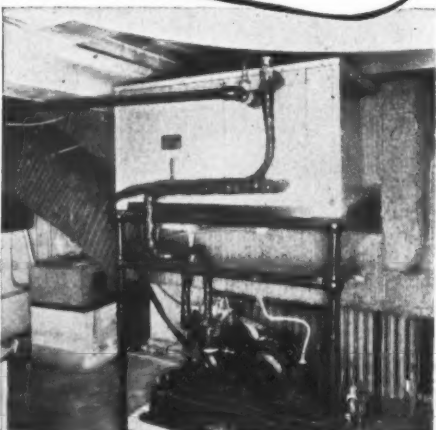
✓ **INHERENT RUGGEDNESS AND COMPACTNESS OF DESIGN** are features that make Wagner motors particularly desirable for air conditioning equipment. Stator frames are of rolled steel—strong, rigid, will not get out of alignment. Well-insulated and carefully treated windings are securely wedged in place. Concentrically-machined end-plates and diamond-bored bearings. Dynamically balanced rotors. Bases formed from steel plate.

The above facts warrant your careful consideration of Wagner motors. Don't overlook the advantages these motors can add to your air conditioning equipment. Write today for your Wagner motor literature. No obligations involved.

MM238-3M

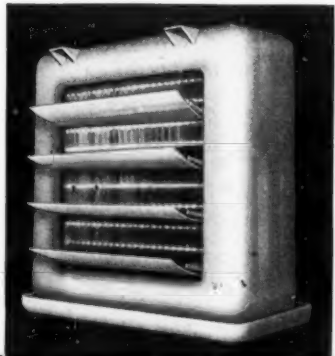
**Wagner Electric Corporation**  
6400 Plymouth Avenue, Saint Louis, U.S.A.

FANS MOTORS TRANSFORMERS BRAKES



A typical air conditioning installation in the basement of a store in New York City. The refrigerant compressor is driven by a Wagner 5 hp. type RP, squirrel-cage polyphase motor. Since user satisfaction is paramount, the dependable performance of this Wagner motor assures its success.

✓ **ACCEPTANCE** by leading air conditioning manufacturers after careful and thorough examination of Wagner motors, along with competitive makes, attests to their ability to give dependable service and user satisfaction. Wagner Sales Department will be glad to furnish you with names of air conditioning equipment manufacturers who are using Wagner motors.





## Profitable Sales Ideas

### Hardware Dealer 'Walls Off' His Electrical Appliance Department and Sales Double

LOS ANGELES—Like many hardware dealers who also handle electrical appliances, R. J. Harwood, proprietor of Harwood Hardware Co., felt that his major appliance lines were not being displayed to best advantage, so—unlike many other such dealers—he decided to do something about it.

Faced with the problem of creating an effective display space for these appliances without crowding his other lines, Mr. Harwood decided to remodel his store in such a way that the appliance section would be separated from the rest of the store, yet visible from the street.

To do this, without sacrificing wall or shelf space for smaller appliances and other lines, Mr. Harwood built a 7-foot-high wall extending 40 feet back into the store from one side of one of the store's display windows. This formed a 15 x 40-foot room, with the 15-foot show window for a front.

Lattice work was extended from the top of the wall to the ceiling, to allow free circulation of air and distribution of light. A door was cut into the side wall to permit passage into the other part of the store, and another in the show window to allow direct entry from the street.

"In this way," explained Mr. Harwood, "we created a display room

which could be used exclusively for appliances, with refrigerators predominating. As the entire front of this room was glass, passers-by on the street could see people in the showroom examining the various appliances, and could see these products being demonstrated by our salesmen.

"Best of all," he pointed out, "the new arrangement enabled us to keep this appliance room open at night, when the balance of the store was closed. This definitely was an advantage, as few housewives buy major appliances 'on their own,' and by having the showroom open at night we are able to demonstrate to husband and wife at the same time. The salesmen take turns at this night job, as only one man is required to be on duty."

At night, this new "store within a store" is brilliantly lighted. Floodlights placed just above the glass front on the store's interior illuminate a large sign in red block letters which reads: "Harwood's Home Appliance Department." Across the front on the exterior is a blue neon "Electrolux" sign. Signs in other windows of the store announce that the appliance department is open until 9 p.m.

All this remodeling, Mr. Harwood reports, has practically doubled the store's appliance sales.

### Small-Town Dealer Finds Sales In His 'Backyard', But He Keeps His 'Backyard' Pretty Big

HOMER, N. Y.—"There are plenty of refrigerator buyers in your own back yard—if you don't build the fence too close to your house."

With this sage bit of philosophy as his guide, Mahlon Brown, manager of the A. B. Brown & Son store here, has hung up a record of more than 100 Westinghouse refrigerator sales in each of the last three years, and has sold 60 refrigerators in the first half of 1938.

Mr. Brown's "backyard" includes Homer, Truckston, McGraw, Virgil, Dreydon, Courtland, and all farms in between. About half his refrigerator sales are made in Courtland, a town of 15,000 just 3 miles from Homer.

The Brown store deals in paints, hardware, farm supplies, and the full Westinghouse line. Since Homer is not large enough a market to absorb all the refrigerators Mr. Brown can sell, he has carried his sales efforts afield, enlisting several allies to aid in his campaign.

One of his principal allies is Dunlap's Furniture Store in Courtland, where Mr. Brown has arranged for a permanent window display of Westinghouse appliances. Dunlap's does no actual selling on the appli-

ances, but as soon as a prospect makes an inquiry, Mr. Brown is telephoned, and either he or one of his salesmen takes up the job.

For each such lead that is finally turned into a sale, Dunlap's Furniture Store gets \$10.

"We keep asking everybody for leads," said Mr. Brown. "Then we go out and call on the prospects until we sell them."

Most leads are supplied by friends, satisfied users, and a cooperative power company. They are followed up by the Brown sales crew, consisting of Mr. Lowell and Mr. Dennison, who work on refrigerators out in the "backyard"; Mr. Perry, who sells milk coolers, and Mr. Shearer, who is the store salesman—and, of course, Mr. Brown himself.

A weekly advertisement on refrigerators, 10 inches high and 4 columns wide, plus an advertisement on ranges and other appliances, is run by the Brown Co. in the Courtland newspaper.

Mr. Brown also is setting up his own program of kitchen proving records as a further means of unearthing more sales in his "backyard."

### A. L. Scaife Addresses Cleveland Club

CLEVELAND—Arthur L. Scaife, sales promotion manager of the specialty appliance sales department of General Electric Co., spoke on "Putting the Click Into Sales Presentations" at the Cleveland Advertising Club's clinic on Oct. 28.

### Waffle Iron Is Offered To Users By Telephone For Prospect Names

BIRMINGHAM, Ala.—A telephone campaign, contacting refrigerator customers, and offering a twin waffle set for names of all prospects to whom a refrigerator is sold, has increased sales for Domestic Appliance Co. here, according to W. C. Knopf, who is proprietor of the dealership.

Telephone calls are made by the office girl and take only a few hours a week. In addition, frequent calls are made on former purchasers in order to help them remember the store in case they do think of a prospect.

### McLane Directs Publicity For Western Mart

SAN FRANCISCO — Wm. B. McLane has been appointed director of public relations of the Western Furniture Exchange & Merchandise Mart, succeeding Miss Marta K. Sironen, according to an announcement by Frank K. Runyan, vice president.

### 'Doorway Spotting' Boosts Sales For Dept. Store

DENVER—"Doorway spotting" of major appliances has successfully stimulated sales of the refrigerator, radio, and washing machine lines handled by the electrical department of the May Co., Denver department store.

For this display promotion, the store uses a small lobby space just inside the main entrance. This space is used alternately for exhibits of the store's various appliance lines, each appliance being shown in actual operation.

One salesman is always stationed with the display, this assignment being rotated daily. Every sale which can be traced back to this idea is recorded, and the salesman who first conversed with the customer is given credit for the sale.

Because of the fact that most customers naturally hesitate a moment upon entering the store, and because the salesman in charge of the display is always ready with a demonstration, the average customer does not resist this sales approach.

The idea of "doorway spotting" grew out of a survey made last year which revealed three pertinent and rather surprising facts. First, a huge percentage of May's customers did not even know that the store handled refrigerators and washers. Second, floor traffic in the electrical appliance section was the lowest in the building. Third, point-for-point the inside door lobby received the heaviest stop-and-look traffic in the store.

### Mills Plays 'Santa' For All 'Good' Dealers

CHICAGO—To help solve the Christmas shopping problems of its dealers, Mills Novelty Co. is offering to give these dealers one gift, selected by Marshall Field & Co.'s gift secretary, packaged in special gift wrappings, and having a value of at least \$3, for each Mills compressor purchased from the company during the month of November for delivery before Dec. 15.

These surprise gifts will be available for men, women, girls, and boys, as specified by the dealer receiving them. The number of gifts which each dealer may receive is limited only by the number of compressors he buys.

A cash prize also is being offered to the best salesman in the Mills organization. Accompanying this cash award is a wallet, on which the winner's name and details of the contest will be stamped in gold.

### Dealer's Float Depicts Old & New Kitchens

CANTON, N. C.—A large, flower-bedecked float, divided into two sections to portray dramatically the difference between the gloomy, inefficient, back-breaking kitchen of yesterday with the cheery, efficient, "wife-saving" kitchen of today, was entered in a recent civic parade by Sluder Furniture Co., local Norge dealer, to promote that company's electrical appliance sales.

M. I. Brooks is vice president.

### Range & Water Heater Improvement Noted

PITTSBURGH—Dealer sales of 119 electric ranges and nine water heaters were made in the territory of West Penn Power Co. during the first half of October, according to reports compiled by the utility company.

Operating under West Penn's new dealer-cooperative policy, dealers have sold 1,559 ranges and 181 water heaters during the first nine months of this year. This compares with 304 ranges and eight water heaters by dealers, and 1,292 ranges and 252 water heaters by West Penn Appliance Co., during the same period last year.

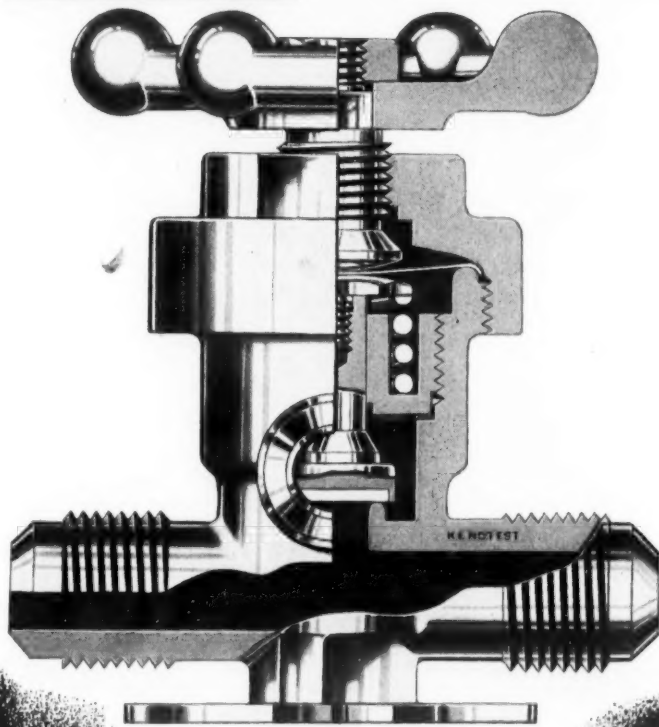
Modern Kitchen Bureau's "Discovery Month" drive was credited with having much to do with increasing October sales. The campaign was localized in this territory through a series of four newspaper advertisements, radio spot announcements, and display banners furnished to dealers.

Dealers also have been staging individual promotions, in which the utility assisted through its home economics and dealer promotion departments.

### Haas Heads Crosley District

CINCINNATI—Herman Haas, of the sales department of Crosley Corp., has been appointed district manager in central Ohio, Thomas W. Berger, general sales manager, has announced.

## Another Outstanding Advance by KEROTEST



### A NEW KEROTEST DIAPHRAGM PACKLESS VALVE

ESPECIALLY DESIGNED FOR ICE CREAM CABINETS, INSTANTANEOUS FREEZERS, HIGH VACUUM, PROPANE AND FREQUENT BENCH SERVICE

Sharing many of the problems of the refrigeration industry, it has long been the policy of the Kerotest organization to design and build improved refrigeration valves to meet specific and exacting applications.

Now comes the most recent Kerotest developments, a line of Angle, 2-Way and 3-Way Diaphragm Packless Valves, especially designed for cold atmosphere applications such as mechanically refrigerated ice cream cabinets, instantaneous freezers or for service with extremely high vacuum or for use on work benches and charging units where the valves are frequently operated.

Backed by years of experience in the manufacture of Diaphragm Packless Valves, these new Kerotest valves embody every feature necessary for long, continuous, satisfactory service.

#### IMPORTANT FEATURES OF DESIGN

1. Raised body seats provide less restriction to flow than on the needle point type seat.
2. Lower stem seat is softer than the raised body seat and consequently takes the wear and may be replaced at a minimum of expense.
3. Pressure tested metal-to-metal joint when the seating stem is raised in contact with the internal bushing.
4. Three diaphragms, each of different metal, best adapted for long wear, corrosion resisting service and larger in diameter than ordinarily used for small valves.
5. Operating stem (with handwheel) provides positive metal-to-metal joint in full open position by screw action of threads, positively insuring against leakage when in full open position.

**KEROTEST**

**KEROTEST MANUFACTURING CO.**  
PITTSBURGH, PENNSYLVANIA

### Anaconda Copper Refrigeration Tubes

Dependable!



THE AMERICAN BRASS CO.  
FRENCH SMALL TUBE BRANCH  
General Offices: Waterbury, Conn.



# Air Conditioning

## Kind of Knowledge Needed To Engage In the Air-Conditioning Business Is Outlined By Veteran Engineer

**Editor's Note:** There is a certain fundamental knowledge necessary in every type of business or profession. Many individuals entering a business or profession, and even many of those who are already engaged in it, fail to discern what they should know about the business.

In the following article a veteran air-conditioning engineer offers an outline of what a man should know to engage in any phase of the air-conditioning business. Whether you're in air conditioning, or just thinking about it, you can check yourself up with this article.

By Henry Knowlton, Jr.

CLEVELAND—After 43 years of active work in the heating and air-conditioning industry, C. F. Eveleth, chief engineer for Smith & Oby, Carrier distributor here, says that he is "just beginning to learn." According to Mr. Eveleth, air conditioning is the most fascinating and absorbing subject in the world; worthy of the full time and attention of anyone who desires to have his life work and hobby rolled into one.

Mr. Eveleth graduated from the Massachusetts Institute of Technology in the class of 1895. Gerard P. Swope, president of the General Electric Co., and Alfred P. Sloan, Jr., chairman of the board of General Motors Corp., were members of the same class. Today Mr. Eveleth maintains that he is as happy in his work as either of his famed classmates, and is thoroughly satisfied with his place in life.

Beginning work as a steamfitter's helper, to learn his trade from "the ground up," he later joined French & Hubbard, mechanical engineers, who were active in the design of school heating systems for the city of Boston. Later Mr. Eveleth joined the Warren Webster & Co. organization, where he served as chief engineer for a period of six years.

### WATCHES STEADY PROGRESS

During years of the depression Mr. Eveleth watched the slow but steady progress of air conditioning. He decided the industry was worthy of his best talents, and that his background as a mechanical engineer, and a heating engineer, would assist him in gaining a thorough knowledge of a new subject.

Questioned as to the things a man should know to become a successful air-conditioning engineer, sales engi-

neer, applications man, or salesman, Mr. Eveleth replied that a complete list of these might well fill the pages of a large book. However, he did enumerate a few which he considers most important. These include:

**Psychrometry**—use and application of the psychrometric chart. Any man engaged in the air-conditioning business should know his psychrometric tables by heart—just as a child knows the multiplication table. Too much stress cannot be put on this point, for a thorough knowledge of psychrometry is the first thing that should be acquired, Mr. Eveleth asserts.

**Thermodynamics**—the air-conditioning engineer should know the basic principles of heat and its characteristics under all normal conditions. The only way this knowledge may be acquired is through a grounding in the science of thermodynamics.

**Airflow in ducts**—Design and application of all air-conditioning systems using sheet metal work must be based on a knowledge of what can, and what cannot, be done with air in a duct system. The applications engineer working in the field must know immediately whether or not his suggested method of installing a duct system is going to be satisfactory and reasonable in cost. Short-cuts, based on an understanding of duct design, are often responsible for successful bidding.

**Heat transmission**—the air engineer and field man must know how to figure heat losses on ordinary buildings, taking into consideration the effects of sun load, awnings, window areas, shades, glass brick, sun load on roofs, and other factors which affect the entire cooling load. In approaching a prospect, the sales-

man should be able, from his own observations, to make a rough estimate of the amount of equipment necessary to handle the job and be able to give the prospect a rough outside price.

This procedure will save the engineering department the expense of figuring an endless number of prospective jobs, where the owner may not be ready or willing to consider the actual expenditure that may be involved.

**Air distribution**—placing of supply and return grilles in the conditioned space is of tremendous importance. Often the job is laid out, in the rough at least, by a salesman, sales engineer, or field engineer. These men must have a working knowledge of grille placement and its effect upon the occupants of the room or building.

**Electricity**—everyone taking a responsible part in the air-conditioning trades should know something about the characteristics of electricity, about various types of motors, safety devices, starters, reduced voltage starters, and the cost of changing electric service in a building when this is necessary.

**Water in pipes**—because of the increasing importance of water costs and water consumption in air conditioning, the air engineer and the sales engineer should know the amount of water that is required for the system under consideration, how much water will flow through a pipe of a given size, and how much this water will cost the owner. Condensing water temperatures have a marked effect on the overall cost of operation and certain cities impose a sewer tax based on the amount of water drained into the city lines.

### KNOWLEDGE OF CONDENSERS

**Evaporative condensers**—use is made of this type of equipment in areas where water or sewage disposal costs are prohibitive. The air-conditioning men must know how these condensers operate and their application to any problem, with respect to first cost and operating cost of the system. Often the original cost of the equipment may be amortized over a reasonable time by the reduction in operating costs.

**Fans**—because of the many types of fans available today, the air-conditioning man must have a basic knowledge of fan engineering. This entails a real understanding of all types of fans, their characteristics, working pressures, and peak efficiencies.

**Building construction**—many air-conditioning systems are installed in existing buildings. This may necessitate structural changes in the building itself or changes in the decorative scheme. It is essential that the air engineer have a working acquaintance with building stresses and safe floor loads. Layout of ducts, wiring, water lines, and refrigerant lines in an existing building requires an understanding of building construction.

### CONTROL METHODS

**Automatic temperature control**—both electric and air-operated control systems are used in air conditioning today, and the air-conditioning engineer must know how to apply each type of system to the problem at hand. There is a multitude of controls available; the engineer must

know enough about them to apply a minimum number of devices and still obtain good results.

### REFRIGERATION KNOWLEDGE

**Refrigeration**—it goes without saying that the air-conditioning man must know a good deal about refrigeration; the way condensing units operate, and how their capacities vary with the suction and condensing temperatures. While the sales engineer need not know how to balance compressors and coils for the most efficient operation, as that is the business of the designing engineer, he should know the relationship of the various parts of the system and their application to a given installation.

### HANDLING PEOPLE

**Getting along with people**—while this subject does not relate to the technical side of the air-conditioning industry, it is of great importance to every man who wants to make a success in the business. When a complaint comes along, it is often easier and cheaper to change the customer's mind than to change the existing equipment.

Many customers, particularly business executives, are "thermometer conscious." People who read the thermometer in the conditioned space every hour of the day will never be comfortable. They will find comfort only when they forget the thermometer and go about their affairs.

Other people are "air movement conscious." These customers are difficult to handle, and it often takes all the ingenuity and knowledge that anyone can have to satisfy them. The air-conditioning system can be adjusted for weeks on end without attaining good results, while if the sales engineer sets out to change the customer's mind about the whole situation, he will often be successful.

The air-conditioning man must understand that "kickers" are usually sincere, and believe they have something coming. It does no good to insist that a complaint is unreasonable, even though it may be exactly that.

### THEY WANT COOLING

Our experience here has been that chronic kickers make a lot of fuss, but they never want their air-conditioning system turned off, after it has been placed in service. Sometimes we have advised them that if conditions were as bad as we had been told, the best thing we could do would be to shut the machine down. To my knowledge there has never been a case where the owner would permit such a procedure.

Successful men in the air-conditioning business, like any other business, must know how to handle people—before the job is sold, while it is being installed and after it is in operation, Mr. Eveleth believes.

When asked what he thought would be the next valuable development in the air-conditioning field, Mr. Eveleth asserted that it would be a commercial light that does not put out a great deal of heat.

### LIGHTING LOADS

"Lighting loads on many air-cooling systems are out of all proportion to the balance of the load. I am looking for some real developments in the field of lighting," Mr. Eveleth said.

According to Mr. Eveleth, a man can find happiness in the air-conditioning business, if he is willing to apply himself to the thousands of everyday problems that come along. He must know his subject thoroughly, know how to put it across with the public, and be able to mold the customer's mind to his way of thinking.

Mr. Eveleth declares that while there are "no free rides" in the air-conditioning business today, there is plenty of work for men that are interested—and a whole lot of fun.

## Disney's Cartoon Gang Will 'Get the Air'—From G-E Systems

LOS ANGELES—Mickey Mouse, Donald Duck, Snow White, and all the rest of the Walt Disney cartoon gang will be "given the air" by their famous boss. Walt will give the air treatment by air conditioning the new studios of Walt Disney Enterprises, Inc.

A contract for air conditioning the various buildings has been signed between the film organization and the General Electric Co., it was announced by Ira Fulmore, president of Air Conditioning Co. of Southern California, G-E distributor for this area. Several engineers from the G-E air-conditioning department at Bloomfield, N. J. have been on the coast to confer with studio engineers on the details of the installation.

The new studio home of the cartoon characters is located on a 60-acre plot of the San Fernando Valley, near the Warner Bros. studios. There will be from 20 to 27 buildings composing the new plant.

The organization is not cramped for space in its present quarters, but is unable to work out its production problems adequately and efficiently, according to Mr. Disney. Air conditioning will be both for comfort and for technical reasons. In addition to the comfort of the workers, the control of humidity is highly important in the processes of inking and painting on celluloid.

Approximately 800 workers are employed in the Disney studios, their average age being 26. To cater to the demands of this youthful organization, there are provisions for more room for lawns, tennis courts, volleyball courts, and swimming in the new quarters.

## Chicago Conditioning Sales In Oct. Top '37

CHICAGO — Five central-station type air-conditioning systems with a combined capacity of 150 hp. were contracted for in the Chicago territory during October, according to reports made to Commonwealth Edison Co. This compares with five contracts aggregating 140 hp. sold during the same month of last year.

Three of the plants sold last month are for general offices, one is for a private office, and one for a restaurant.

Four electric room coolers also were sold by Chicago dealers during October, compared with six such units in the same month of last year.

## Carrier Will Cool 6 Fair Exhibits Besides Own

NEW YORK CITY—Air conditioning for six exhibits at the 1939 New York World's Fair, in addition to its own exhibit, will be supplied by Carrier Corp.

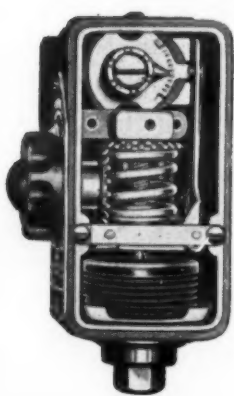
Cooling equipment will be installed for du Pont, Ford Motor Co., Consolidated Edison Co., Borden Milk Co., the French government, Glass, Inc., and for the theater and concert hall of the World's Fair Corp.

Cooling for the du Pont exhibit will be piped underground from the demonstration system in Carrier's five-story "Igloo of Tomorrow."

## 16 Systems Added To Lines Of Utility In Sept.

OKLAHOMA CITY, Okla.—Installation of 16 air-conditioning systems was made during September by dealers in the territory of Oklahoma Gas & Electric Co., according to reports made to the utility's headquarters.

## You Get the Life Insurance of SYLPHON BELLOWS in PENN ELECTRIC CONTROLS



Penn Electric Controls are well known to refrigeration engineers for their simple efficiency and dependability in service.

Sylphon Bellows—the bellows that have been proven by unbiased independent test in customer's laboratories\* to have 17 times longer life than ordinary diaphragms—are used in every Penn Electric Control for the "Life Insurance" they provide as the sensitive, yet rugged, almost indestructible heart of these instruments.

Cut your service costs by insisting on Sylphon-Bellows-equipped Controls.

Or, if you build refrigerating machinery, valves or thermostats, consider providing the "Life Insurance" of Sylphon Bellows at the vulnerable points in your product's design. Write for bulletin WO-121.

**THE FULTON SYLPHON CO.**  
KNOXVILLE, TENNESSEE

Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

\*Unbiased test made independently by one of our customers in his own plant laboratory. (Borne out by our research and 35 years of practical field experience.)

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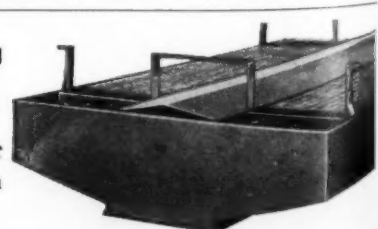
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**LINDERME TUBE COMPANY**  
CLEVELAND, OHIO, U. S. A.

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**AUTODRAFT** is designed for positive circulation and maximum cooling. Write for interesting data.



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CHICAGO



## Distributor-Dealer Doings

### N. J. Leagues Note Business Rise

ATLANTIC CITY, N. J.—Definite but slight upturn in the electrical industry was noted by speakers and delegates at the seventh annual convention of the New Jersey Council of Electrical Leagues, held in Hotel Traymore here Oct. 16 and 17.

Although the trend had been downward during the first half of the year, delegates representing public utilities, equipment dealers, maintenance services, and wiring contractors agreed there had been definite improvement during the past two months in sales of appliances, house wiring, and total consumption of electrical power.

Informal business discussions and consideration of merchandising plans were led by G. J. Redmond of Hackensack, president of the state association, and B. A. Seiple of Asbury Park, vice president in charge of sales for Jersey Central Power & Light Co.

Discussion was revived at the convention of uniting into a single statewide body the eight regional leagues which now comprise the state council. Also under consideration were proposals for unification of various local merchandising and promotion programs.

### California Distributor Opens New Showrooms

SAN FRANCISCO — California Electric Supply Co., distributor in this territory for various lines of home appliances, has opened an office and showroom on the fourth floor of the Western Merchandise Mart here, reports Edwin L. McDonnell, general manager of the distributorship.

Included among the appliance lines to be displayed in the new showroom are Standard electric ranges and water heaters, Burkay gas heaters, and Glenwood gas ranges.

### Cohen Heads Retail Dealer Dept. For Anchor Lite

PITTSBURGH — Appointment of Myer M. Cohen as head of retail dealer promotion on Crosley appliances for Anchor Lite Appliance Co., Crosley distributor in this territory, has been announced by Harold W. Goldstein, general manager of the distributorship.

### Dealer Sells 9 Appliances On One Order—For Cash

KINGSTREE, S. C.—L. S. Carter, Inc., General Electric dealer here and in Georgetown, S. C., recently sold nine major appliances—five 8-cu. ft. refrigerators, one 12-cu. ft. refrigerator, one range, and two beverage coolers—all in one order . . . and for cash.

### New Kelvinator Dealership

BATON ROUGE, La. — Home Appliance Sales, Inc., has opened as a Kelvinator refrigerator dealership in this area. B. C. Nabors, president of the firm, was formerly with the Kelvinator distributor in Birmingham, Ala.

### Prize Features Opening

BATON ROUGE, La.—The Household Appliance Corp. has opened as a General Electric appliance dealer at 526 Main St. All opening-day visitors were given useful souvenirs, with a G-E refrigerator given away as an attendance prize.

**PAR CONDENSING UNITS**  
28 MODELS  
1-4 TO 20 H. P.  
WRITE FOR FREE CATALOG  
MODERN EQUIPMENT CORP.  
DEFIANCE, OHIO, U. S. A.

### Washington, D. C. Branch Of Kelvinator Will Move To New Bldg.

WASHINGTON, D. C.—Local factory branch of Kelvinator division, Nash-Kelvinator Corp. will be moved from its present location at 1022 15th St. N.W. to its new building location now nearing completion at 1101 Second St. N.W., according to D. A. Dimitry, branch manager. Moving will be completed by Dec. 15.

In these new and larger quarters, more conveniently located and with ample parking facilities, the branch will carry out its recently announced plans to wholesale household appliances. All operations—sales, display, parts, service, and warehousing—will be conducted under one roof.

Location of the Baltimore branch, operations of which will parallel those of the Washington office, remains unchanged, but the parts and service departments are being expanded.

### All Rogers Men Win In Drive

PITTSBURGH—"Everyone a winner!" boasted the Kelvinator appliance salesmen of C. R. Rogers Co., Kelvinator and Philco distributor here, after the recent "Job Builders Campaign" conducted by Nash-Kelvinator Corp. in connection with the National Salesmen's Crusade.

The members of the Rogers Kelvinator sales staff and their respective winnings are: Troy V. Grady, regional first prize of \$250; E. C. J. Lloyd, choice of merchandise prizes valued at \$100; C. V. Long, merchandise prize of \$60; Phil Goodman and Howard L. Tangert, merchandise prize of \$25 each.

Paul L. Chamberlain is Kelvinator sales manager for the Rogers company, and R. H. Davison is division manager in this territory for Nash-Kelvinator Corp.

### I. H. Silverman Becomes Distributor Salesman

MIAMI, Fla.—I. H. Silverman, for a number of years buyer of major electrical appliances for Burdine's, one of Miami's leading department stores, has resigned this position to become representative in southeastern Florida for Cain & Bultman Co., distributor in Florida for Norge products, Bendix home laundry equipment, and Zenith radios. The distributing firm maintains offices in Jacksonville and Tampa, as well as Miami.

### Delbert Mitchell Opens Own Appliance Dealership

CULPEPPER, Va.—Delbert Mitchell, formerly service manager for Simon Distributing Corp., Hotpoint distributor in Baltimore, has opened his own appliance dealership here.

### Harry Collins, Conditioning Engineer, Dies

BIRMINGHAM, Ala.—Harry Collins, air-conditioning engineer with Bromberg & Co., died Oct. 24 in a Birmingham hospital following an operation for a brain ailment. He was 33 years old.

**Compressors**

**M&E**  
EST. 1866

**MERCHANT & EVANS CO.**  
Phila., Pa., U. S. A. Plant at Lancaster, Pa.

### Ohio Distributor Adds Appliance Line

CLEVELAND — Lott & Geckler announces the opening of an appliance distributing department at 606 Huron Rd. here. The company has been engaged in the distribution of floor coverings in northern Ohio for the past 40 years, and maintains a branch in Detroit.

Carl Theobald, who has been associated with the merchandising of major appliances for several years as a range specialist for Electromaster Inc., Kelvinator, and Standard Electric Mfg. Corp., has been appointed manager of the appliance department.

Lott & Geckler will distribute Detrola radios.

### Chicago Utility Promotes Three Sales Heads

CHICAGO—William T. Reace has been appointed manager of merchandise sales for Commonwealth Edison Co. to succeed Gardner S. Howland, who died recently. Mr. Reace formerly was assistant manager of merchandise sales.

William R. Cannon, previously assistant to the manager of merchandise sales, has been promoted to Mr. Reace's former position; and Leonard F. Mahlke, formerly supervisor of residential small appliance sales, has been named assistant to the merchandise sales manager.

### Detrola Appoints 14 New Distributors

DETROIT — Appointment of 14 new distributors to handle Detrola Corp.'s 1939 line of radios and radio-phonograph combinations has been announced by Sales Manager James J. Davin.

New distributors are: Lott & Geckler, Cleveland; Logan-Gregg, Pittsburgh; Horrocks-Ibbotson, Utica, N. Y.; Newell Distributing Co., Providence, R. I.; Johnson Supply Co., Clarksburg, W. Va.; Charles Ilfeld Co., Albuquerque, N. M.; Gallup Mercantile Co., Gallup, N. M.; Jensen Bird Co., Spokane; Spokane Paper & Stationery Co., Spokane; S & S Auto Parts Co., Duluth, Minn.; W. S. Nott Co., Minneapolis; Milton Brooks Co., Meridian, Miss.; Milton Supply Co., Jackson, Miss.; Standard Parts Co., Columbus, Miss.; Keps Electric Co., Pittsburgh; and R. J. Kyle Co., Charleston, W. Va.

### Hemenway's Chain Opens Branch In Bunkie, La.

BUNKIE, La.—Hemenway's, central Louisiana chain furniture and household appliance firm, has opened a branch here with David Singleton, Jr., formerly assistant manager at Alexandria, as manager. The store will carry a full line of Frigidaire and Norge refrigerators in addition to other electrical appliances.

### Merrill Electric To Occupy New Quarters

MERRILL, Wis.—Merrill Electric Co. will move from its present quarters to the George Shafer Jewelry Store building here after Jan. 1. The building has been purchased by Arthur Tholl and L. C. Hackbarth, owners of Merrill Electric Co.

**Anaconda Copper Refrigeration Tubes**  
for difficult jobs!

**THE AMERICAN BRASS CO.**  
FRENCH SMALL TUBE BRANCH  
General Offices, Waterbury, Conn.

### Dealers & Distributors In Spokane Organize

SPOKANE, Wash.—So that electrical appliance merchants in this locality may present a united front in matters pertaining to their trade, the Electrical Wholesalers and Retailers Association was formed here recently.

Some 60 members of the trade were present at the organization meeting. Ed Berquist was elected president, and a committee was named to work with him in drafting the association's program.

### Frigidaire Chicago Branch To Occupy Mart Offices

CHICAGO — Frigidaire's Chicago branch sales operation will soon have new quarters in the Merchandise Mart, world's largest building.

Complete facilities of the Chicago Frigidaire office will occupy 45,000 sq. ft. of space on the seventh floor of the building. Remodeling will begin at once.

### Kansas Dealer Sells Unit For Delivery In India

STERLING, Kan.—What is claimed to be a record for long-distance delivery was established by O. W. Volkland Furniture Co., Hotpoint dealer here, who sold an 8-cu. ft. refrigerator to a local minister for delivery in Calcutta, India. The minister had been assigned there.

### N. J. Distributor In Business 20 Years

CAMDEN, N. J.—Bornstein Electric Co., distributor of Westinghouse refrigerators and appliances, celebrated the twentieth anniversary of its founding on Oct. 26.

The firm had its inception 20 years ago in a small shop and warehouse at 930 Broadway. An electrical wholesaler, the company moved to larger quarters at 918 Broadway with the advent of "all-electric" radios, and was a pioneer in the electric refrigeration field even before popular acceptance of that appliance.

Now located at Broadway & Mickle St., the company also has a warehouse at 5th & Pine Sts. I. Bornstein, head of the company, is past president and present treasurer of the Electrical League of South Jersey. In addition to its electrical appliance activities, the company also is distributor for Williams Oil-O-Matic oil burners and heating equipment, and has established a department for the engineering and installation of automatic heating and air conditioning.

### Cuba Hardin Has Display At County Exposition

OWENSBORO, Ky.—Cuba Hardin, Jr., General Electric dealer, displayed refrigerators, washers, and radios at the first annual Davless County Agricultural, Merchants & Manufacturers Exposition here Nov. 2 to 5.

# BUNDY TUBING

... the strength of steel  
plus workable ductility

**BUNDY TUBING CO.**  
DETROIT



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## Forward Steps

OUT of the ferment of  
discontent which has char-  
acterized so many meetings and  
individual expressions of appliance  
dealers during the chaotic season  
now coming to a close, a number  
of forward steps have been taken  
to encourage dealers in the hope  
that the appliance business is  
moving toward a clean-up of its  
Augean stables.

One of these which has received  
favorable comment from coast-to-  
coast was the announcement by  
Westinghouse that "courtesy dis-  
counts" were to be discontinued  
by all its wholesale houses. At  
first this announcement was  
greeted with considerable skepti-  
cism, but after some weeks of  
testing, dealers are now finding  
that Westinghouse means business.

### Manufacturers, Utilities Plan Dealer Strengthening

Tangible evidence from other  
manufacturers and distributors  
that their products are to be had  
only through enfranchised mer-  
chants has also been forthcoming,  
as has a general willingness to  
stabilize and maintain retail prices.  
Distributors everywhere are find-  
ing that it pays to police their  
dealers, and eliminate the chiselers  
from the picture.

On the front page of this issue  
is told the plan of the Consolidated  
Edison Co. of New York—a city  
where "I can get it for you whole-  
sale" has been a slogan for years—  
for giving dealers a fairer chance  
to make legitimate sales to con-  
sumers. In the past Consolidated  
Edison has come in for consider-  
able criticism on the part of  
dealers for its aggressive merchan-  
dising policies, and this step is  
hailed as a progressive move by  
such groups as the Electrical &  
Gas Association of New York City,  
the Electrical Appliance Dealers  
Association of Brooklyn, and the  
Electrical Merchants Association  
of Queens, Inc.

### Suggest Rigid Wholesale And Retail Price Lists

To dealers in some other cities,  
the details of this plan may be  
somewhat confusing because of

the use of the term "wholesale."  
In New York the "wholesale divi-  
sion" of a distributorship really  
means the "apartment house"  
division. New York distributors  
have always sold directly to quan-  
tity purchasers, and sometimes at  
prices lower than they quote their  
dealers on the same merchandise.  
This new plan would establish  
a definite "wholesale" scale of  
prices higher than those at which  
dealers can obtain the same mer-  
chandise. Thus the dealers will  
have an opportunity to go after  
that type of business, if the plan  
is generally adopted, and to partici-  
pate in the profits of such  
sales if made directly by the  
distributor.

### Elimination of Misleading Prices on Small Boxes

Another plank in the platform  
is to the effect that promotional  
activities be centered on automatic  
refrigerators of 5 cu. ft. or more  
capacity, thus removing most of  
the opportunity for the advertising  
of loss-leader "specials" at prices  
so low that they confuse the  
prospect and lead to bargaining  
and chiseling.

All such movements to make  
the retail appliance business a sane  
and profitable one are, of course,  
highly gratifying to dealers. It  
should be pointed out, however,  
that on dealers themselves rests  
the major responsibility for main-  
taining price structures. Only by  
refusing to cut prices themselves,  
and by banding together to hold  
weaker members in line, can the  
appliance dealers of the nation  
hope to achieve the stability and  
respectability for which they  
yearn.

## The Nation Speaks

ENCOURAGEMENT to the  
business men of the nation  
can be read in the election returns  
of Nov. 8. Republicans added 80  
seats in the House; they picked  
up 11 important governorships—  
which will have a significant bear-  
ing on the 1940 presidential cam-  
paign; and the Republican gains  
(eight) in the Senate, combined  
with the recalcitrance of unpurged  
Democrats and their more con-  
servative party mates, may serve  
effectively to block further radical  
reforms and blows to legitimate  
business.

### Strong Opposition Necessary To Functioning of Democracy

Irrespective of normal party  
affiliations, most lovers of democ-  
racy are happy over the outcome  
because they believe in two-party  
rule—two strong political organi-  
zations to check and balance each  
other, rather than one party so  
dominant it can be dictatorial.

As Arthur Baer puts it, "we are  
glad to see that the elephant has  
exchanged its oxygen tent for the  
main top."

### New Hope For Revision Of Wagner Labor Law

What's more, many discerning  
observers of the national political  
arena believe that this new align-  
ment of legislative forces can  
succeed in revising some of the  
hampering and unfair statutes now  
on the books. In this connection,  
a recital of the six amendments to  
the Wagner Act which have been  
proposed by John C. Gall, New  
York legal counsel for the National  
Association of Manufacturers, will



bear repetition and emphasis.  
They are amendments providing:

"That the courts be given per-  
mission to review the facts of a  
case as well as the legal conclu-  
sions of the NLRB.

"That the administrative and  
judicial functions of the board be  
separated.

"That the employer be permitted  
by petition to have an election  
called.

"That the workers be protected  
from intimidation and coercion by  
unions as well as by employers.

"That the board be forced to  
certify its reports within a definite  
length of time, so employers' ap-  
peals to the courts can be  
facilitated.

"That the employer be protected  
in his refusal to deal with unions  
for a reasonable length of time if  
the union has not kept within the  
bounds of the law."

### Salesmen Can Capitalize On Current Good Feeling

Tax legislation and the spending  
programs will come in for heavy  
shelling, too, it is predicted. All  
of which will help the business  
men of America put the nation  
on its feet again, so that the  
long-delayed recovery may become  
an actuality.

Incidentally, the good feeling  
among responsible people engendered  
by the outcome of the recent  
election can be capitalized upon by  
salesmen. People who have post-  
poned buying or investing because  
of the uncertainties of the times,  
"until they could see what's going  
to happen," may now be encour-  
aged to part with some money for  
things they need or want.

This should be a great time to  
sell.

## LETTERS

### 'Sam' Finds News Would Have Been a Good Bet

Westinghouse Electric & Mfg. Co.  
246 East Fourth St.  
Mansfield, Ohio

F. M. Cockrell:

I have been on the road as usual,  
and have just had a chance to see  
the 500th issue of the AIR CONDITIONING  
& REFRIGERATION NEWS. Somehow I  
get quite a shock when I remember

that I remember your first issue very  
distinctly. From some of the strug-  
gles you were having in those days, I  
would have given little for your  
chance of publishing 500 consecutive  
issues.

Why one paper lives and another  
dies is a combination of so many  
things, I wonder if anyone has ever  
attempted to define the rules for  
keeping a paper alive.

Certainly, whatever the rules are,  
you have either consciously or uncon-  
sciously followed them. It has always  
been a marvel to me, the number of  
papers that have died in the past.  
In the face of all this, your paper  
has always been in my estimation one  
of the best papers of its type that  
comes to my desk.

I not only want to congratulate you,  
but give you the thanks of a man  
whom you have helped considerably  
over the past years.

VERNON E. VINING,  
Director, Department Store Sales

### Sees Value In Series On Soda Fountains

H. Mac McChesney  
Mills Units—Peerless Coils  
Oil Burners—Stokers  
1306 14th Ave., Sterling, Ill.

Sirs:

Have bought your magazine several  
times. It is very good.

Your 500th edition has shown me  
that it is something that one should  
not be without. One article in particu-  
lar appealed to me as something  
worthwhile—that is the "Commercial  
Service" page 28.

Please sign me up for a one-year  
subscription.

H. MAC MCCHESENEY

### Seeks an 'Unroller'

Vancot  
Automatic Electric Refrigeration  
With Methyl Chloride  
Peterbenoitstraat 55  
St. Amandsberg, Gent, Belgium  
Oct. 24, 1938

Editor:

I take the liberty of asking you if  
you could inform me, or place me in  
touch with a manufacturer for the  
following:

I have a request for a fitting for  
a refrigerated drying room, the for-  
mer to serve for an unroller of thin  
wood for veneer. The fitting should  
serve for a production of 5 cubic  
meters (6.54 cubic yards) every eight  
hours for thicknesses of from 1/10  
millimeters to 5 millimeters (0.024 to  
0.197 inches).

L. VAN DE COTTE

### A South American Wants the Travel Book

E. L. Weldie  
Caixa N. 2781  
Sao Paulo, Brazil  
Sept. 27, 1938

Editor:

Enclosed herewith check for \$3.50  
for which please send me:  
Directory No. D-1, latest edition,  
Also Manual T-1, Foreign Travel  
Pictures.

Also I am very anxious to obtain  
Mr. Taubeneck's book containing the  
complete story of his "Around the  
World" trip containing the articles

originally published in your maga-  
zine. Please send this book with the  
other two, and if the amount remitted  
is not enough, you can omit the  
Manual T, or send the three and a  
debit note of whatever the difference  
may be and I will remit this at once.

Please advise expiration date of my  
present subscription on AIR CONDITION-  
ING & REFRIGERATION NEWS.

E. L. WELDR

### Soda Fountain Series Started In Oct. 19 Issue

220 E. Kennedy, Algona, Iowa

Sirs:

I want to be sure and get all series  
on soda fountain and ice cream cabi-  
net servicing. If this special offer  
does not include all, please send what  
I have missed C.o.d. The last NEWS  
I have is of Oct. 19.

WALTER L. SHELLMYER

Answer: The series of articles on  
servicing of soda fountains, ice cream  
cabinets, and counter-type ice cream  
freezers started in the Oct. 19 issue.

### He'll Get the News In Darkest Africa

Carrier Corp.  
International Division  
Syracuse, N. Y.

Sirs:

Please accept my subscription for  
the AIR CONDITIONING & REFRIGERATION  
NEWS for a period of one year be-  
ginning with the next issue.

The magazine is to be sent to the  
attention of the writer at the follow-  
ing address:

c/o United Africa Co., Ltd.  
Electrical Dept. (Carrier Engr.)  
P. O. Box No. 570  
Lagos, Nigeria, West Africa

My funds are in transit and pay-  
ment of the subscription will be made  
on my arrival in West Africa, ap-  
proximately Dec. 10.

Thanking you for your favor and  
looking forward to receiving your  
magazine in a far off land.

J. W. COWAN

### Building a Library

Box 16  
Quantico, Va.

Sirs:

Enclosed find \$1.00 money order for  
a copy of Manual No. 4, Household  
Refrigeration.

I wish to state I am well pleased  
with my trial subscription of AIR  
CONDITIONING & REFRIGERATION NEWS as  
well as manuals No. 2 and 3 of  
Household Refrigeration Series.

It is my plan to order various books  
from time to time until I have the  
complete Refrigeration Library.

Wishing you continued success in  
the field, I remain

M. J. HARDICK

### 'If Good as Told' . . .

Independent Refrigeration Service  
Box 102, Russiaville, Ind.

Sirs:

Enclosed \$1 for Directory and  
weeks AIR CONDITIONING & REFRIGERATION  
NEWS. If good as told it is  
renew subscription.

R. McMINN



## Service Men Must Coach Public About Cooling—Carrier

BUFFALO—The greatest service a refrigeration service engineer can perform for the air-conditioning industry and for himself is in helping to educate the user as to the real meaning of true air conditioning and to coach him in maintaining a properly balanced temperature and relative humidity, declared Willis H. Carrier, chairman of the board of Carrier Corp., in an address before the fifth annual convention of Refrigeration Service Engineers Society, held here Nov. 2 through 4.

In this way, Mr. Carrier pointed out, the service engineer will be helping to clear up a situation which at present threatens the future of air conditioning.

### PUBLIC MISLED

The buying public, present and prospective users of air-conditioning equipment, does not know just what true air conditioning is, said Mr. Carrier. People have been misled into believing that air cooling is air conditioning, and the unsatisfactory results of many air-cooling devices are turning people against the idea of air conditioning.

Mr. Carrier warned that unless this situation is cleared up, unless the buying public is educated in air conditioning, unless public acceptance of and a general desire for true air conditioning can be effected, the future of air conditioning might be disappointing.

"You will speed up general use of air conditioning by doing a good job," Mr. Carrier told the refrigeration service engineers. "You have a very important service to perform in proving how well equipment can be serviced at a reasonable cost and to the satisfaction of the user."

It should be made clear, Mr. Carrier advised, that proper air conditioning must include ventilation, purification, and possibly deodorizing of air, heating or cooling as the weather requires, humidifying or dehumidifying according to needs.

### INTO 'PERSONAL' STAGE

At present, Mr. Carrier said, air conditioning is in a stage of being consolidated and perfected.

"We are going from the commercial field into the personal and private field," he declared, stating that private homes, offices, and similar small rooms requiring more personalized air conditioning probably will be the best market in the future.

Accordingly, Mr. Carrier added, the refrigeration service engineer will find a great demand for his services in this field.

As in all industries, he pointed out, air conditioning is now in a phase or state of development in which the public desire for air conditioning is increasing while the available product continues to be improved and lowered in cost.

### SMALL FIELD BEST

Air conditioning has come to the forefront primarily because its commercial value has been realized and appreciated, as in the case of theaters and department stores, and because a new type of refrigerant has been developed which affords a means of low-cost air conditioning, Mr. Carrier said.

One of the greatest developments in air conditioning has been the trend from large central-station units to small, almost wholly automatic units for small enclosures.

These small units require the service engineer, Mr. Carrier asserted, and it is with these units that the refrigeration service engineer should find his future.

## Reverse Cycle Setup Cools, Heats Utility Store & Showroom

PARKERSBURG, W. Va.—Demonstrating how a building can be heated, cooled, and ventilated with clean, fresh air, created by summer air-conditioning equipment, a "reverse cycle" system has been installed in the local appliance store of the Monongahela West Penn Public Service Co.

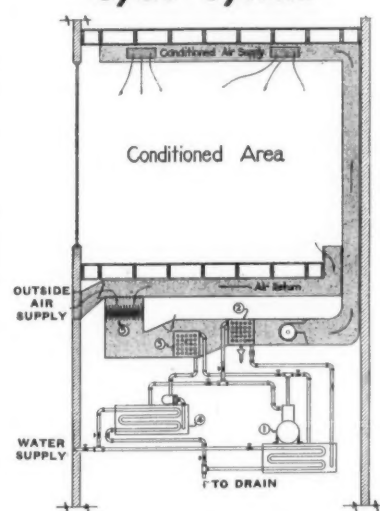
A 10-hp. refrigerating system, a water cooler used for the extraction of heat during winter, a dual coil arrangement, and an electrostatic precipitator combine to produce what the owner advertises as "the purest air in the world."

Possibilities in "reversed cycle heating" have been evident, particularly in areas having a relatively high mean winter temperature, for a number of years. Air-conditioning engineers know that the refrigeration machine is a "heat pump," which may be used to produce heat, as well as to remove it.

During winter operation, heat is extracted from city water of normal temperature and released into the duct system by a hot-gas coil, which gives up heat to the moving air in the system. In refrigeration, the same heat is normally dissipated by a water cooled, or evaporative, condenser. Humidity is supplied by a spray system.

Summer operation is similar to other cooling systems, except that an electrostatic precipitator is used

### Diagram of Reverse Cycle System



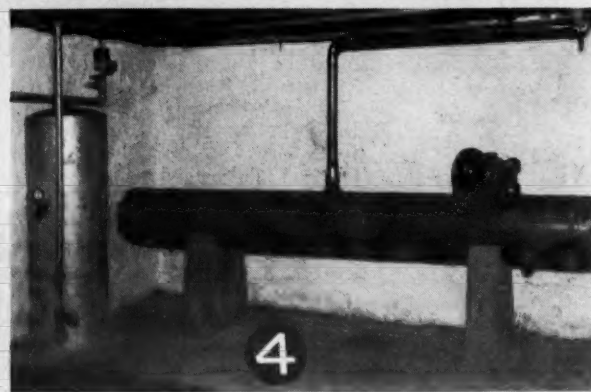
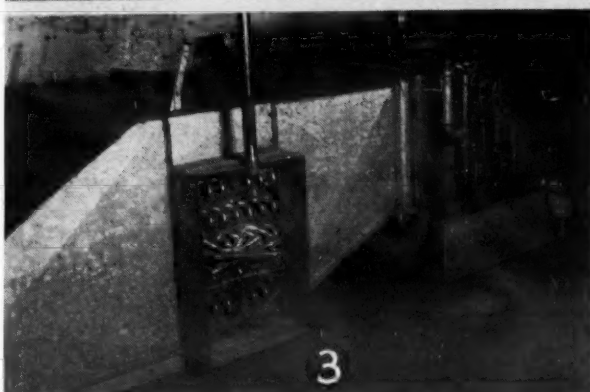
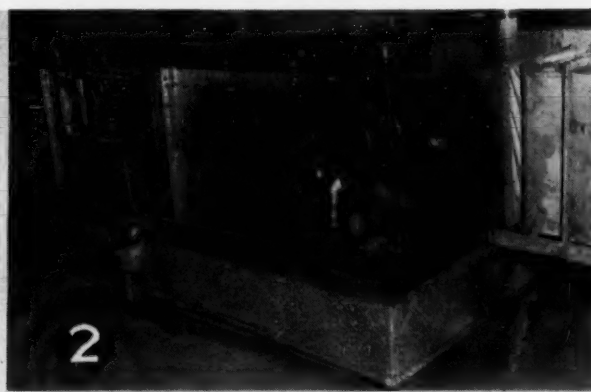
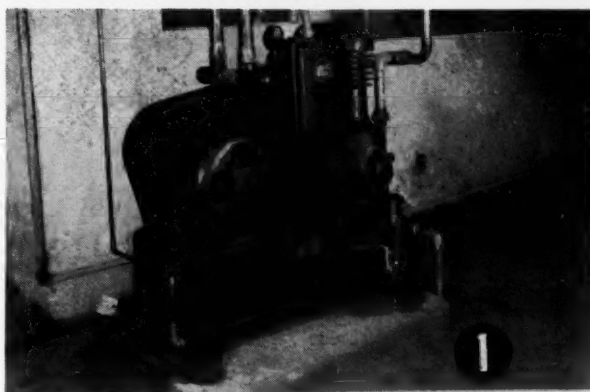
(1) Ten-ton York compressor supplies summer cooling and winter heating. (2) Summer cooling coil served by compressor. (3) Heating coil where heat-laden gas is compressed. (4) Water cooler where water is "cooled" in winter; heat extracted from the water is supplied to heating coil. (5) Electrostatic precipitator which cleans return air and outside air.

to remove dirt, dust, and a certain amount of bacteria from the air.

In the precipitator, air passes over a series of tiny wires charged with high voltage direct current; the dust, dirt, and pollen particles also become charged. The charged air is then directed through a series of plates, some of which are charged with opposite current, others grounded. As the charged air passes the charged plates, dust is deposited on the plates. Issuing air is claimed to be 95% pure.

Conditioned air is introduced to the appliance store through grilles located in the side of furred ducts running overhead in the room. Air is supplied to these grilles by a 4,000 c.f.m. fan, powered by a 1½-hp. motor.

## Where a Refrigerating System Does Both Heating & Cooling



- (1)—York 10-ton compressor is the heart of reversed cycle air-conditioning system installed in the Parkersburgh, W. Va. appliance store of the Monongahela West Penn Public Service Co.
- (2)—Cooling coil (York). The 2-hp. fan handles 4,000 c.f.m.
- (3)—Heating coil where hot refrigerant gas serves as heating medium.
- (4)—Acme water cooler which "cools" water while heat extracted is carried to heating coil by the refrigerant.
- (5)—Electrostatic precipitator (Westinghouse) removes dust, dirt, and all impurities from the incoming air.

Details of the system were worked out by Paul Hamond, head of the refrigeration engineering department of the Monongahela system, who was assisted by E. A. Johnson and W. B. Hawkins.

### Delco Conditioner Uses New Heat Transmitter

DAYTON, Ohio—The "lamp chimney" type of heat transmitter used in the Delco-Frigidaire "Quik-Action" furnace has been announced as standard equipment in the Delco Conditionair, winter air-conditioning unit of the warm air type, by the Delco-Frigidaire Conditioning division of General Motors Corp.

The new transmitter is a special heat-resistant metal alloy chamber which fits entirely around the flame in the burner, leaving a small outlet port.

Oil and air mixture in the cylinder reaches a peak state of combustion and the transmitter becomes glowing hot in from 35 to 50 seconds, it is claimed, thus eliminating any delay between the "off" and "on" cycles of the thermostatic control.

By confining the flame in the new metal container, Delco-Frigidaire engineers claim to have succeeded in eliminating the refractory fire box linings, which hitherto has been considered a necessary part of any heating chamber.

This elimination is said to result in an increased heating rate of the flame and more nearly complete combustion of fuel materials.

### New Truck Is Designed For Heavy Cylinders

WATERTOWN, Mass.—A new truck for handling heavy cylinders of anhydrous ammonia, chlorine, and other chemicals has been put on the market by Lewis-Shepard Sales Corp. here.

By means of a special frame and clamp device, the operator of the truck may select a tank from the storage line without disturbing other tanks, it is claimed. A push on the lever clamps the tank to the truck frame, and the frame is then pulled back to carrying position.

One truck will carry different size cylinders of similar design up to 15 inches in diameter to 53 inches long, it is said. Large wheels and roller bearings allow the truck to run easily over heavy floors, it is claimed.

### Booklet Covers Control Of Bacteria In Systems

NEW YORK CITY—A newly revised booklet prepared especially for refrigeration engineers and executives responsible for the efficient operation of air-conditioning equipment has been issued by Oakite Products, Inc.

The booklet, "Bacteria Control in Air Conditioning," reviews new methods in air-conditioning systems where the air is washed by a recirculating water supply. There is also included a discussion of the control of bacterial growths, protection of equipment against corrosion, prevention of slime and algae deposits in the system. The avoidance of water scale formation also is discussed in the booklet.

Supplementary data includes the problems of controlling odors, avoiding clogged spray heads and return lines, treating humidifying systems, cleaning air filters, and cleaning evaporators and shell-and-tube type condensers.

### Leopold and Vincent Address Engineers At Waynesboro

WAYNESBORO, Pa.—Air-conditioning methods and applications were the principal subjects of discussion at the November meeting of the Philadelphia section of American Society of Refrigerating Engineers, held Nov. 4 in the Anthony Wayne hotel here.

"Selection of Air-Conditioning Methods" was outlined by Charles S. Leopold, Philadelphia consulting engineer, and "Application of Air Conditioning to Aircraft Factory" was discussed by Paul J. Vincent, Baltimore engineer and contractor who made the Martin Co. installation. Review of Chapters 4 and 5 of the A.S.R.E. Data Book was given by H. N. Roberts, vice chairman of the section.

D. Norris Benedict, general manager of Frick Co., welcomed section members to Waynesboro and chairmaned the meeting.

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Impure air, water and high humidities hold no terrors for Hussey Pure Lake Copper, recognized as the most enduring form of copper obtainable. Armored against corrosion by Nature itself, Hussey Pure Lake Copper ideally solves the corrosion problems of modern air conditioning equipment, adding years of service under the most adverse service conditions. Specify Hussey on your next air conditioning job—a great name in copper for more than 90 years.

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## Commercial Service

### Exact Knowledge Needed In Mixing of Brines and Filling Brine Tanks Used In Soda Fountain Refrigeration

This, the fourth in the series of articles on servicing of soda fountains, ice cream cabinets, and freezers, written by Mr. Black and Mr. Seitz, gives information on the various types of brines, how they are properly mixed, and the conditions under which the various types of brines are to be used.

Those who read this article will discover how thoroughly the authors are discussing each phase of the subject.

By Arch Black and Dean C. Seitz

Brine tanks used in the soda fountain field may be classified not only as to their construction (full-depth or stub-tank), but also according to the type of brine that should be used in them.

Some brine tanks are not completely solder-sealed around their top edges. These are known as open brine tanks. Other tanks are completely soldered or sealed around the top edges with only one opening, which is the brine filler hole.

Sealed brine tanks may use either calcium chloride brine or alcohol brine. Before placing alcohol brine in any creamer unit tank, make certain whether it is closed or sealed type of tank.

If alcohol is placed in an open type of brine tank it is entirely possible that the alcohol odor and fumes will permeate the ice cream sleeves, imparting a strong alcohol odor in the compartment and possibly flavoring the ice cream.

#### CALCIUM CHLORIDE BRINE

Always follow the recommendation of the soda fountain manufacturer as to the proper brine that should be used. If calcium chloride brine is recommended, its preparation should be handled with great care.

The water and the calcium chloride should be mixed in a tub or other suitable large vessel. Four pounds of flake calcium chloride should be dissolved in one gallon of water to obtain the proper strength of solution. For example, 20 gallons of water to which has been added 80 pounds of calcium chloride will produce 24 gallons of brine.

A proportion of 4 pounds of cal-

cium chloride to 1 gallon of water will produce a brine of 102 salometer or 1.225 specific gravity reading at 70° F. When taking a brine reading with a salometer or hydrometer, be sure to take the temperature of the brine, as the density varies at different temperatures.

When calcium chloride is added to water, a considerable amount of heat is generated due to heat of solution and dilution of calcium chloride, and a rise in temperature results. At a temperature of 110° F. and a hydrometer reading of 1.215, the brine will have a reading of approximately 1.225 when reduced to a temperature of 70° F.

An easy and satisfactory means of determining the freezing point of any calcium chloride brine is by the use of the "Calci-Chlor-o-Meter" (see Fig. 1). This instrument is manufactured by E. Edelman & Co., Chicago.

With the ordinary hydrometer it is necessary to apply a correction factor to the reading if the brine temperature isn't the same as the temperature at which the hydrometer is calibrated by the manufacturer.

With the Calci-Chlor-o-Meter, actual freezing points can be accurately read at any brine temperature between -20 and 120° F.

To use the Calci-Chlor-o-Meter, simply draw the brine into the instrument by means of the rubber bulb. Note the reading of the float, note the reading of the thermometer; then compare the two readings on the correction table, and the answer is the freezing point of the brine.

Cracked ice may be used to keep down the temperature of the brine while it is being mixed. Eight and one-half pounds of ice may be used as the equivalent of 1 gallon of water. By keeping the brine cooled in this manner, the initial running time of the condensing unit will be greatly reduced.

Never put the brine into the tank until all of the ice has been melted. When filling the tank, strain the brine through a double thickness of cheese cloth in order to remove any foreign matter.

#### FILLING THE BRINE TANK

In filling the brine tank, cover the cabinet with heavy wrapping paper or old cloth, and always use a funnel

to avoid spillover. Any spillover should be wiped off immediately with wet cloths to avoid corrosion of the metal top of the fountain.

In tanks that are completely sealed it will be necessary to place a short piece of 1/4-inch tubing inside the funnel to allow the air to come out while filling the cabinet. If the brine has not been previously thoroughly strained, cover the funnel with cheese cloth.

Never fill a brine tank completely full of brine. The tank may be filled to within approximately 1 inch of the bottom of the filler hole. If, after pouring the brine into the tank, it is not full to the point specified, do not add more water, but mix additional brine. Never mix an extra strong solution of brine and expect to dilute it in the cabinet.

#### NEUTRALIZING THE BRINE

There is a chemical reaction between calcium chloride, water, and oxygen from the air which produces hydrochloric acid. This acid will corrode the lining of the brine tank, causing many small holes and brine leaks, unless the brine is kept neutralized.

One ounce of lime (calcium hydroxide) should be added to each 10 gallons of calcium chloride brine

can take to eliminate the possibility of very expensive repairs or even complete replacements of their brine tanks.

To check the brine for neutralizing, remove an ounce or two from the tank and place it in a test tube or tumbler. To this brine add a small amount of phenolphthalein which can be purchased at practically any drug store.

Upon addition of the phenolphthalein, the brine, if free from acid, will turn red in color. If it remains colorless the brine must be removed from the creamer unit tank and neutralized carefully or fresh brine used. The brine may be removed quickly by means of a small pump. If no pump is available, it may be syphoned from the tank.

Use of caustic potash as a neutralizing agent is not recommended, for if a slight excess is used, it is most likely that the solder used in the joints of the brine tank will be attacked. It is recommended that lime be used as a neutralizing agent when copper brine tanks are in use and sodium chromate for galvanized tanks.

#### ALCOHOL BRINE

Those soda fountain manufacturers who make two-boiler fountains with the closed or sealed brine tank construction usually recommend the use of denatured alcohol brine. The standard mixture is 50% alcohol and 50% water by volume. For example, 12 gallons of water plus 12 gallons of alcohol equals 24 gallons of brine.

Experience has shown that an alcohol having the least odor should be used. Formula No. 1 or Solox or Ponsolve will be found satisfactory for brine tank use. The alcohol and water should be mixed thoroughly before the filling operation is started.

Since the alcohol brine will shrink appreciably in volume as it is cooled, it may be necessary to add a slight amount of additional brine upon the first call back to the job. In no case should the alcohol brine be used in an open brine tank.

In a closed brine tank the level should be maintained at approximately 1/2 to 1 inch below the top of the tank.

Caution: Never use a match in determining the level of brine in the tank. If the brine happens to be alcohol, serious damage to both the fountain and yourself may be the result. Always use a flashlight in determining the level of the brine.

If brine is spilled into the ice cream sleeves, or if alcohol brine is used in an open brine tank, the odor of alcohol will permeate the entire ice cream storage compartment. The odor may be removed, although it is a rather tedious task.

Activated carbon is a suitable material for absorbing the alcohol odor. The activated carbon should be placed in the bottom of the ice cream sleeve and an electric fan should be used to force air through the carbon. If activated carbon is not available locally, it may be purchased from the Betz Corp., Betz Building, Hammond, Ind.

If during your service work you encounter a leaking brine tank, it is recommended that you contact immediately the manufacturer of the soda fountain to obtain his recommendation. He will probably ask you for a quotation on installing a new brine tank shipped from their factory. It is not considered good practice to patch or attempt to repair an old brine tank, because a perfect job can rarely, if ever, be done, and the customer will not be thoroughly satisfied.

#### Maples Electric Sets Up Service Department

DANSVILLE, N. Y.—Maples Electric Supply Co. has established a complete department for servicing electric refrigerators, washers, and radios.

### Mueller Brass Introduces New Cartridge Type Of Dehydrator

PORT HURON, Mich.—A new dehydrator of the cartridge type, with the cartridge refill sealed in an air-tight, moisture-proof container to insure absolute dryness, has been added to the Mueller Brass Co. line of accessories for mechanical refrigeration.

To keep the dehydrating agent absolutely dry up to the moment the service man is ready to place the cartridge in the dehydrator, cartridges are dehydrated at the factory and immediately sealed under proper atmospheric conditions in a moisture-proof metal container.

Projecting through the container's label is a metal lug or tab, which the service man simply grasps with pliers and pulls out to open the can.

Outlet end of the cartridge, called the "Dri-Drier" by the company, is marked with a red spot, so that the user will know which end to insert in the dehydrator shell. Cartridge is sealed into the shell by means of a heavy gasket at the inlet end. This minimizes any tendency for refrigerant to flow around the outside of the cartridge, it is claimed. Replacement gaskets are furnished with each cartridge.

Incorporated in the cartridge is the cone-shaped outlet screen, an exclusive Mueller development on which patents are pending. This cone-shaped screen, with a surface area of approximately 4 1/4 sq. in., directs small particles of the dehydrating agent to the base of the cone, it is claimed.

This leaves the center of the cone open for free flow of the refrigerant, minimizing restriction and pressure drop, possible occurrences when particles of the dehydrating agent lodge on the face of the outlet filter. Cone screen is filled with pure wool, to trap the smaller dust-like particles.

Dehydrator shell is made from hard-drawn copper tube with forged brass caps, and may be used over and over again, it is said. It is furnished with 3/8-inch inside I.P.S. outlets for use with any stock adapters from 1/4 to 3/8-inch flare.

Cartridges are furnished with Activated Alumina, calcium oxide, calcium chloride, or Drierite as the dehydrating agent, and also are stocked with filter and strainer elements. Strainer cartridge is equipped with a 150-mesh cylindrical screen, and the filter cartridge is the same as the strainer, with the addition of an asbestos filter sack.

### New Pipe Threaders And Workholders Offered By Ridge

ELYRIA, Ohio—Two new series (No. 65R and 85R) of "Rigid" pipe threaders have been introduced by Ridge Tool Co. here. These tools are now of all-steel and malleable-alloy construction, with drop-forged hardened tool-steel cam plates said by the manufacturer to give quicker, easier pipe threading.

These new tools thread four sizes of pipe: 1, 1 1/4, 1 1/2, and 2-inch—all with one set of chaser dies. Only four dies, instead of the usual 16, stay in the threader, saving time and trouble for the operator, the company claims.

A choice of two practically automatic workholders, a cam and a plate type, is offered by the new pipe threaders. There are no bushings; both types simply set to pipe size, and are tightened with one screw. These workholders take 2-inch couplings for threading 2-inch close nipples. Closed chaser slots on the die face are said to be non-stretchable.

The Ridge company also has announced a new Rigid series of poster pipe threaders with all-steel and malleable-alloy construction. Four sets of chasers thread 1 to 2-inch pipe. Full-floating posts are separately replaceable. These threaders also give a choice of workholders.



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USE CHICAGO SEALS  
CHICAGO SEAL CO.  
9 S. CLINTON ST. — CHICAGO, ILL.

### Calci-Chlor-o-Meter

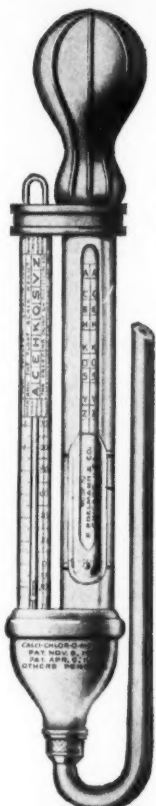


Fig. 1—Instrument for determining actual freezing points of brine mixtures.

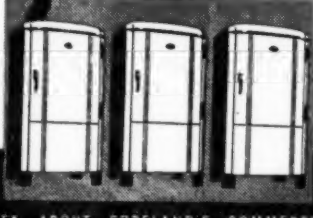
to prevent the ionization and resultant corrosion. Lime may be used perfectly satisfactorily as the neutralizer in copper tanks, but should never be used as the neutralizer in galvanized tanks.

For galvanized tanks, use 1/4 ounce of sodium chromate for each gallon of brine. These neutralizing agents may be obtained at a drug store.

After three or four years, the brine in the tank of the creamer unit using calcium chloride should be neutralized by adding lime. Brine which has been in use for three or four years should be neutralized at least every six months. This is a service which you may render to soda fountain owners using calcium chloride brine. Do not fail to point out to your customers that this is the cheapest form of insurance they

Specify **PENN**  
AUTOMATIC CONTROLS AND SWITCHES  
FOR RECOGNIZED RELIABILITY  
Write for Catalog  
**PENN ELECTRIC SWITCH CO.**  
GOSHEN, INDIANA

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Because they're built right—super-featured for quick sale, super-powered for performance.  
Because they're priced right—giving you the great advantage of low cost, low down payment, easier terms.

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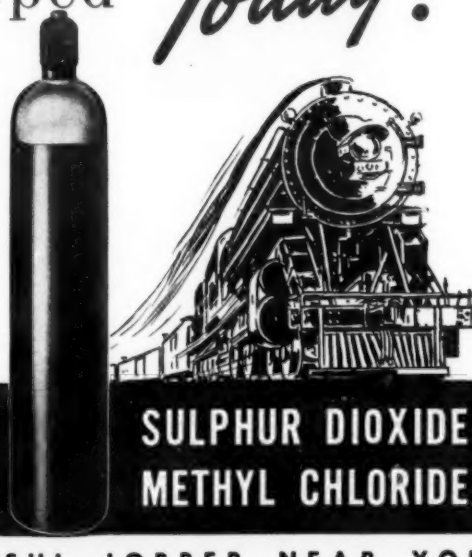
**Copeland Refrigeration Corporation**  
Sidney, Ohio

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# Service Methods

## 'Careful Handling & Correct Application Necessary If Drying Agents Are To Work Properly' Service Men Hear

Judging from the interest shown by those who listened so attentively to Mr. Hall's talk before the service engineers convention in Buffalo, the subject of drying agents and dryers is very important to the service and installation engineer and contractor today.

Mr. Hall's talk and the subsequent discussion by Mr. McGovern sheds much light on the various types of drying agents, how they should be handled, and how they are used to best advantage.

**BUFFALO**—Condition of a drying agent at the time the service man receives it and the manner in which the service man handles and takes care of it are two important factors to be taken into consideration in the matter of drying refrigerating systems, declared V. E. Hall, Hall Refrigeration Co., Binghamton, N. Y., in an address before the fifth annual convention of the Refrigeration Service Engineers' Society here Nov. 3.

"The trouble is not in the type of drying agent used," Mr. Hall pointed out, "but in its mishandling by packers, repackers, and service men."

Any drying agent must be handled carefully, said Mr. Hall. Drying agents are designed to absorb moisture, and they will absorb moisture from the air in a room just as readily as in a refrigerating system. For this reason, a drying agent should be carefully packed, sealed, and handled with extreme care to prevent or reduce to an absolute minimum its exposure to air.

### BUY THEM SEALED

"I have tested all types of drying agents as they are available to service men," Mr. Hall stated, "and I have found from 5 to 10% moisture content in many cases."

Because drying agents often are improperly handled between the time they leave the manufacturers' hands and reach the service man, Mr. Hall advised the service men to buy drying agents in factory-sealed containers.

"Drying agents available to the service man," said Mr. Hall, "are as follows: Activated Alumina, barium oxide, calcium chloride, calcium oxide, Drierite, and Silica Gel."

"Activated Alumina is the trade name for aluminum oxide ( $Al_2O_3$ ) prepared for dehydration of gases and liquids."

"Drierite is the trade name for prepared anhydrous calcium sulfate ( $CaSO_4$ ).

"Silica gel is the trade name for material manufactured from water glass and sulphuric acid or similar chemicals."

### HOW THEY WORK

"All of the above except Activated Alumina and Silica Gel pick up moisture by chemical reaction, i.e., they change their chemical structure, and in this case heat is given off."

"In the case of Drierite, only part of its total dehydrating capacity is through chemical reaction; the balance is obtained through adsorption."

"Activated Alumina and Silica Gel dehydrate entirely by adsorption. No chemical or apparent physical change takes place."

Mr. Hall explained that because of this adsorptive action, poor results have been common due to improper handling by repackers and service men.

### LOOKS ARE DECEIVING

The service man usually can tell if a calcium chloride drying agent has picked up moisture in the can

or jar, because its appearance will have changed, Mr. Hall said, but as a rule Activated Alumina, Drierite, and Silica Gel look just about the same wet or dry.

"Some of the material offered to the service man is so wet," Mr. Hall continued, "that it will actually add moisture to a system rather than remove it. This is also true of some of the factory-charged dryers."

"On the other hand, some of the manufacturers are turning out a good product only to have it ruined on the jobbers' shelves through poor packing or capping or careless handling by clerks."

### BEST IN SMALL PACKAGE

"Drying agents should be purchased only in factory filled and sealed containers of small size. If large cans are opened and closed several times, there is always the danger of contamination."

"In picking the type of drying agent to use, the relative quality of the agent obtainable in your locality is far more important than the type."

Mr. Hall proceeded to grade each type of drying agent according to results obtained in laboratory tests. He explained that field conditions and laboratory conditions are entirely different, and that the findings do not necessarily apply exactly to field servicing.

### HE GRADES 'EM

"Activated Alumina is excellent for either a service or permanent dryer for any low pressure refrigerant," Mr. Hall reported. "It works fair on low temperature applications."

"Barium oxide was used with good results on both sulphur dioxide and methyl chloride, but its powders badly and the fumes are poisonous."

"Calcium chloride is satisfactory for a service dryer, but shouldn't be left on but a few hours, as it will dissolve if much water is present. It will, however, remove methyl alcohol that has been put in a system to prevent freeze-up."

"Calcium chloride doesn't have any favorable qualities. It will neutralize acid in a methyl chloride system, but so will a little steel wool."

"Drierite is excellent for either a service or permanent dryer. It works well on low temperature applications."

"Silica Gel also is excellent for either a service or permanent dryer. It powders the least of any tested, and works well on low temperature applications."

"Zinc will not remove water although advertised to be used on  $SO_2$  jobs. It is worthless by itself and is no better than steel wool for a neutralizer in conjunction with a drying agent on methyl chloride with which it may form an explosive combination."

Mr. Hall described various tests which are used in determining the condition of different drying agents.

"The manufacturer of Drierite," he said, "gives a simple test to check the condition of this material. Put about a tablespoon full into a small container such as a crucible or small ointment jar, insert your thermometer, and sprinkle (don't drown) water on the Drierite. A rapid rise of from 18 to 36° should be noted. If this rise is not noted, the material needs regeneration."

"This same test will work on Activated Alumina and Silica Gel, but the rise in temperature will only be about 10 to 15°, as there is no chemical reaction."

"A more sensitive test is made with a 15% solution of cobalt chloride in methyl acetone. This is made by dissolving one teaspoonful of the reagent grade in methyl acetone. Put this in a dropper bottle containing a little Drierite or Activated Alumina to dry it."

### ACTIVATED ALUMINA TEST

"When it is desired to test Activated Alumina or Drierite, simply drop three or four drops on the agent and note the color. If it stays blue for a few minutes, you may be sure the agent is pretty dry. If it almost immediately turns pink or rose red, it would be well to reactivate it."

"This can be done by baking in shallow pans in your oven at about 350 to 400° for two or three hours. Note how the rose color turns to blue when dried out. This is the basis of the indicating type agent put out by Activated Alumina and Drierite."

"This test doesn't work so well on Silica Gel, as the acetone seems to carry the cobalt chloride into the agent, making it more difficult to note a color change."

### ACTIVATING A DRYER

In telling of a method for activating a dryer, Mr. Hall said, "If you have time you can activate your dryer after charging by baking it for two hours at 350 to 400°. It should be connected to a vacuum pump during this time to draw off the water vapor so that it won't remain in the shell."

"Felt pads don't stand this temperature very well; so use pads of extra fine steel wool. If Activated Alumina or Drierite is used, follow the dryer with a felt pad filter to catch any powder from the drying agent."

"Another method that is almost as good as the above is to activate the agent in shallow pans at the high temperature and dry the dismantled shell and pads at about 250°; then assemble and charge the dryer while everything is hot."

### MOUNT THEM VERTICALLY

"Dryers should be mounted vertically with the outlet pointing in the direction of gas or liquid travel. This will give the best contact and allows for good oil circulation."

"The quantity of drying agent to use for various jobs is a hit or miss proposition. In general, use as large a dryer as practical on a wet system. Use at least a tenth of a pound of drying agent to a pound of refrigerant in service dryers."

"Permanent dryers put on after service dryers or as a precautionary measure may run one-half of this. Remember that you can use too little but not too much on a wet job."

### CHECKING SATURATION

"Many of you may use a dryer ahead of the vacuum pump on your oven, and you are always wondering if it is saturated but can't be sure until the pump sticks up."

"Try filling a chemical flask or test tube with indicating type Activated Alumina or Drierite, close the flask with a two-hole rubber stopper with the inlet tube run through the agent, insert the outlet tubing in the other hole, and connect between your regular dryer and the pump. When all the agent in the flask has turned pink, it is time to change your dryer, as water is going through to the pump."

Dryers should never be used as a substitute for careful workmanship

in installation and service, Mr. Hall told the service men.

## McGovern Gives Further Data on Drying Agents

Several of the points touched upon by Mr. Hall in his talk were discussed in more detail, immediately following the talk, by E. W. McGovern of the R. & H. Chemicals Department of E. I. du Pont de Nemours & Co., Inc., manufacturer of refrigerants.

Mr. McGovern stated that he was rather certain that calcium and barium oxide were manufactured under exclusive patents held by the Chicago Pneumatic Tool Co., and that for manufacturers to use these materials, some sort of a licensing arrangement may be necessary.

Barium oxide, Mr. McGovern warned, gives off heat, and may possibly cause explosions because of the high temperatures generated.

All alkaline dryers react slowly with refrigerants, the R. & H. engineer explained, and should therefore be used only temporarily, and not left on the unit for indefinite periods of time.

Advantages of calcium oxide are that it takes up the moisture very rapidly, and also that the particles are soft and therefore are not abrasive if carried through the system, according to Mr. McGovern.

He also declared that alkaline dryers may mitigate the effects of copper plating of compressor parts and valves.

One "extra" feature of Activated Alumina as a dryer is that it will take up the hydrochloric acid that may have formed in the system, Mr. McGovern declared.



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## ACTIVATED ALUMINA

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## Anniversary Celebrated By Manhattan Rubber

PASSAIC, N. J.—Forty-fifth anniversary of the founding of Manhattan Rubber Mfg. Co., now Manhattan Rubber Mfg. division of Raybestos-Manhattan, Inc., was celebrated here recently.

Incorporated in October, 1893, the company began manufacturing operations Jan. 1, 1894 in a small building with a force of 40 men.

Today, the company employs about 3,000 persons in a plant covering 800,000 sq. ft. of floor space, and has auxiliary plants in Whippany, N. J., Neenah, Wis., and North Charleston, S. C.

Mr. Townsend has been chairman of the board of the parent company, and general manager of the Manhattan division, since the merger with Raybestos in 1929.

Nearly 200 of Manhattan's employees have been with the firm for more than 25 years, and 24 of these persons began working for Manhattan company before the turn of the century.



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# Engineering

## Operation of 'Sterilamp' In Controlling Food Bacteria Outlined By Rentschler

KNOXVILLE, Tenn.—What the "Sterilamp" is and how it controls, in conjunction with refrigeration, molds and bacteria growth in food storages, was described by Dr. H. C. Rentschler, director of research, Westinghouse Electric & Mfg. Co., before the recent Food Conference held at the University of Tennessee here with the cooperation of the American Society of Refrigerating Engineers.

One of the chief purposes of refrigeration is to inhibit spoilage of food caused by bacteria and mold. The low temperature retards the growth of the bacteria and mold but does not kill them, Dr. Rentschler explained.

### LOGICAL COMBINATION

As early as 1887 it was shown that spores as well as bacteria are destroyed when exposed to the ultra-violet from sun light, and the use of ultra-violet radiation from artificial sources has frequently been suggested as a bactericidal agent and for the prevention of mold growth.

The possible combination of ultra-violet with refrigeration is a logical one, said the speaker. To make such a combination practical a large amount of information on the effects of radiation on bacteria and mold was required, and a simple, cheap, and reliable source of the effective

ultra-violet radiation had to be developed.

Only the ultra-violet radiations of wave lengths shorter than about 3,000 Angstrom Units have bactericidal action. Such short radiations are produced at efficiencies that are commercially useful only by electrical discharges through gases or vapors as by mercury arcs or by open arcs (special carbon arcs). It is extremely difficult to control the intensity of such a source.

Therefore a simple integrating ultra-violet meter was first developed for measuring the effective amount of the bactericidal radiation applied in a given test. With the use of this meter the factors influencing the bactericidal effects of ultra-violet were determined. The operation of the meter is simple and reliable.

### RADIATION EFFECTS

For the preservation of foods in refrigerators it is essential to destroy or retard the growth of surface bacteria and mold. To determine the radiation effects on such surface bacteria a simple method was developed for uniformly seeding a number of petri plates with bacteria or mold spores so that the effects of radiation could be investigated under controlled conditions, Dr. Rentschler stated.

A culture medium containing the bacteria to be tested is sprayed into

a large box or chamber using an ordinary spray gun operated at about 40 pounds pressure. The spray is allowed to remain for about one minute to obtain more uniform suspension throughout the box.

A tray of sterile agar petri plates is then placed in the box and the organisms allowed to settle on them for a few minutes. Upon incubating the plates thus seeded it is found that the number of colonies on the different plates is very uniform. The problem of determining the effects of radiation on these surface organisms becomes relatively very simple.

A number of plates are simultaneously seeded as described. Several plates are incubated and serve as controls—that is to determine the average number of colonies originally on each plate. Other plates are subjected to definite amounts of radiation. This is done by placing the plate and the photocell at the same distance from the radiation source.

### PLATE EXPOSURE

The plate is exposed to the radiation for a measured number of counts of the meter, after which the plate is incubated. The difference in the number of colonies on the control and the exposed plates clearly represents the number of colonies killed by the applied radiation. From this the percentage killed is calculated.

By this method of uniform seeding and the exposure to definite measured radiation the effects are determined with a minimum amount of work and the results can be readily repeated.

Different plates from the same seeding were exposed to the same amount of radiation as measured by the meter from such widely different sources as mercury arcs or discharges in corex or quartz or to the radiation from various open carbon arcs.

The percentage of colonies killed by the different sources was within experimental error the same, showing the reliability of the titanium cell in this meter for measuring the bactericidal action from different ultra-violet sources.

By the use of the meter and the method of uniform seeding certain relations regarding the action of radiation for the killing of bacteria and the destruction of mold spores have been established.

### IMPORTANT RELATIONS

A few of the more important relations having direct bearing on problems of refrigeration are given here.

1. Over a wide range of intensities extending from a single condenser flash to an intensity requiring an hour or more the amount of radiation required to kill a fixed percentage of a given organism is constant.
2. The killing of bacteria or mold spores by the ozone produced by the radiation from even a quartz lamp is negligible as compared with the killing by the radiation itself. That is, where direct radiation is possible the effect due to ozone is negligible.
3. Air-borne organisms require much less radiation (only about one tenth) than is required to kill these same organisms after they have settled on a petri plate or in a liquid medium. This is of special importance in the use of radiation for sterilizing air as in air conditioning and in keeping air in refrigerators, etc., in a sterile condition thereby avoiding contamination.
4. The amount of radiation required to kill different organisms varies greatly. Thus with a given meter the radiation producing seven discharges kills typhoid as effectively as 15 discharges for coli or 30 for subtilis and several hundred for some types of mold.

### KEEP FOOD STERILE

This further shows the importance in using the radiation to maintain a sterile condition rather than to allow the organisms to contaminate a surface and then apply the radiation to destroy them. The continual radiation is able to maintain a sterile condition while it is often difficult to apply the required amount of direct radiation to a contaminated surface in the available time.

5. Ozone in very minute traces is helpful in not only retarding but also in killing bacteria and mold spores where direct radiation cannot be applied. By the combination of the far more effective direct radiation together with the circulation of air over lamps producing a minute amount of ozone, bacteria and mold

spores may be effectively destroyed not only in the irradiated areas but in the shaded places as well.

An ultra-violet lamp which has been found suitable for such a combination of ultra-violet radiation with refrigeration has the trade mark Sterilamp. The ultra-violet is produced by a low current discharge through a mixture of mercury with a special gas mixture in a long slender tube of special glass.

About 80% of the total radiation generated by the discharge through this lamp is in that part of the spectrum where the bactericidal action is greatest and yet there is produced a harmless amount of ozone. The lamp takes about 10 watts—has a long useful life—approximately six months' continuous operation—is simple and reliable in operation with relatively small fluctuations in output.

The temperature is only a few degrees higher than that of the surrounding air and consequently is well suited for operation in refrigerators. This special lamp properly placed in refrigerators prevents mold and slime on meat not only at low temperatures such as are normally used in holding boxes but at higher temperatures and at high humidities, Dr. Rentschler claimed.

## Plant Modernization Begun By Bridgeport

BRIDGEPORT, Conn.—Reconstruction and modernization of its pipe and tube mill here has been started by Bridgeport Brass Co. as the next step in a long-range program undertaken to improve all manufacturing facilities, according to an announcement issued by the company.

Additional tube mill equipment will be installed, and the entire operation of this division of the company will be broadened through utilization of space vacated by the moving of rolling mill equipment to the recently completed \$4,500,000 rolling mill.

With the alteration and modernization of the pipe and tube mill and the installation of new equipment, additional facilities will be provided for making new tubing alloys, and, at the same time, manufacturing capacity will be increased and additional space will be made available for carrying larger quantities of finished stocks of brass and copper pipe, copper water tubing and condenser tubing for steam power plants, company officials explained.

In addition to the new rolling mill, which has an estimated capacity of more than 6,000,000 lbs. of sheet metal per month, new construction carried out by the company includes the completion of a new office and laboratory building in which all research, development, and testing facilities are housed.

Modernization work now being done on the pipe and tube mill will be continued to include the wire and rod mills and other manufacturing branches of the company, it was said.

## G-E Announces New Magnetic Switch For Motors

SCHENECTADY, N. Y.—A new magnetic switch for use with single-phase motors whose normal full-load current does not exceed 30 amperes, has been announced by the industrial department of General Electric Co. Available in ratings of 3 hp. at 110 volts, 5 hp. at 220 volts, and 7½ hp. at 440 volts, this new device consists of a standard general-purpose four-pole magnetic switch with two poles connected in parallel. This arrangement makes the device equivalent to a two-pole switch with one overload relay.

## Booklet Illustrates Use Of Zinc Alloy Castings

NEW YORK CITY—Two new booklets illustrating and describing the use of zinc alloy castings in "Industrial Equipment" and "Hardware" have recently been issued by the New Jersey Zinc Co. here.

The "Industrial Equipment" booklet lists uses for zinc die castings in overload relays, vari-pitch and multiple v-belt pulleys, automatic coal stokers, and other industrial equipment. Use of the material on stove, refrigerator, and other goods is described in the "Hardware" booklet.

## 'Radical' A-P Thermostat Wins Plastics Award

NEW YORK CITY—Radical basic redesign in the new A-P thermostat manufactured by Automatic Products Co., Milwaukee, won for this unit honorable mention in the household group of the Third Annual Modern Plastics Competition conducted by Modern Plastics magazine.

This new instrument is considered as illustrative of the trend toward the use of plastics to overcome the special problems of certain industries. The original A-P thermostat was housed in drawn brass finished in bronze, with louvers down each side, allowing the room air to pass through the housing and into contact with a bi-metallic strip within the device which detects any temperature changes.

Improved engineering efficiency is said to be reflected in the prize-winning plastic model, redesigned by Barnes & Reinecke of Chicago. The thermostat, which is recessed into the plastic housing, is brought closer to the scoring on the housing, for easier reading. The new temperature adjusting dial consists of a molded plastic, clearly marked and numbered.

The complete unit consists of five molded parts—(1) a wall plate used on line voltage thermostats only (2) the terminal board to which the wiring is attached (3) the thermostat base which has two female bosses at the top and a single male boss at the bottom which hold the cover securely and at sufficient distance from the base, thus providing a louver opening around the entire edge (4) the cover (5) the dial.

Terminal board, thermostat base, and dial have been molded of gold-brown Durez or Bakelite with ivory numerals brushed into the dial.

## Tagliabue Introduces 9-Inch Recorder

BROOKLYN—A new 9-inch recorder for temperature and pressure, having all of the features of the 10 and 12-inch recorders but occupying less space, has been announced by C. J. Tagliabue Mfg. Co.

Features claimed for these instruments include: interchangeable tube system that can be replaced readily and need be checked at one temperature only; no backlash or lost motion as pen arm is supported by bearings at both ends; safety link for range protection; 3/16-inch pen travel assuring open graduations; and removable capillary fountain pen.

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## Major Appliances

### Frigidaire CD-2 Model Enables Milne To Make 'Maidless Kitchenette'

MONTREAL, Que., Canada—Several years ago H. M. Milne of Modern Household Appliances, Ltd., designed what he termed the "Maidless Kitchenette Unit," a refrigerator-range-sink combination intended for use in apartments or other small living quarters where kitchen space was limited.

Stymied temporarily by lack of a suitable refrigerator to complete the ensemble, Mr. Milne was unable to manufacture the Maidless unit and so shelved his plans for the time being.

Introduction of the Frigidaire model CD-2, however, offered a solution to the problem, so Mr. Milne dusted off his plans and set his organization to work on the new combination unit.

The kitchenette unit consists of a 60-inch Monel metal top having an 8-inch splash as well as two end splashes. The back splash is perforated all along the top edge, so as to permit air circulation for the refrigerator unit. The sink bowl is 18 inches square and is equipped with a dual cup strainer.

To the left of the sink is a Clare Jewell four-burner under-oven gas range. To right is the Frigidaire CD-2 refrigerator.

Front cover of the sink unit is fitted with a door providing access to all wiring and plumbing used in the ensemble. Above this door is a perforated panel which, together with a 4-inch toe space at the base of the unit, makes possible air circulation.

The Monel metal top is so arranged that it rests on top of the refrigerator, and the front panel is merely screwed to the refrigerator wall by means of three self-threading screws. Thus the refrigerator may readily be removed for service or replacement.

The Maidless kitchenette lists at \$354 complete. The ensemble will be sold in the Montreal territory by Modern Household Appliances, Ltd. The unit was exhibited at the Toronto exhibition this summer by Canadian Nickel Products Co., Clare Bros. & Co., and Frigidaire division, General Motors Sales Corp.

Fifty-five of these kitchenette units have been installed in the Unique apartments in Montreal, and two more jobs are under way there which will use four and 12 of these units, respectively.

### Monongahela System Range Sales Up

FAIRMONT, W. Va.—Big increase in electric range sales during October, electric range "Discovery Month," is reported by Monongahela West Penn Public Service Co. here. Sales to mid-month were 19 units, only three under the quota of 22 set by Modern Kitchen Bureau for the territory, as compared to only seven electric range sales in the entire territory last October.

The company expected to boost its range total to 30 or 35 units by the end of the month.

### Food Is Old Fashioned, But Cooking Is Modern

OLYMPIA, Wash. — Convincing testimony as to the value of a modern electric kitchen is offered by the proprietor of the French Cafe on the outskirts of Olympia.

This lady, who (with the help of her son and daughter) runs this well-known roadside eating place where food is cooked according to old traditional French recipes handed down through the family for generations, has this to say about her kitchen:

"Electricity is essential to our service—we can't do without it and we certainly do enjoy and appreciate it. Without this electricity, which we use for refrigeration, cooking, water heating, and dishwashing, we would be 'sunk.'"

### Technical Standards and Who'll Bear the Cost Are Television's Problems

DETROIT—Two major questions must be answered before television pictures are ready for the general public, according to I. J. Kaar, design engineer of the General Electric Co.'s radio division.

The first of these questions, the fixing of satisfactory television standards, has practically been settled now. The second, the method of paying for the programs, has not yet been settled. Mr. Kaar pointed out in an address delivered here before the fall convention of the Society of Motion Picture Engineers.

The marked difference in the importance of standards between television and sound broadcasting was emphasized. In sound broadcasting the technical quality of transmitted programs can be improved year by year without affecting the usability of a speaker once it is purchased, even though it may become outmoded.

"The situation in television is quite different," continued Mr. Kaar. "Because of the use of scanning and the necessity of synchronization between receiver and transmitter, if transmission standards are changed, receivers designed for the old standards become useless. Because of this fact no responsible manufacturer would sell receivers to the public until standards were fixed by the industry and sponsored by the Federal Communications Commission."

The required technical perfection needed to justify the high standards has now been attained and the essential standards agreed upon. It is held that the last technical obstacle in the path of commercial television has been removed so far as the excellence of the picture is concerned.

The question of who shall pay for television programs, however, is still unanswered. The present broadcasting system, on the other hand, has commercial sponsors who pay the bill. Such a system requires tens of millions of receivers who may be induced to buy the advertised products.

"Such an audience does not exist in television," the speaker said, "and cannot be expected for several years."

No such an audience existed in the early days of sound broadcasting, and the receiver manufacturers, along with a few others, operated the stations. At that time the novelty of programs coming through the air at no cost was entirely new, Mr. Kaar pointed out. The listening public was quite satisfied with the toy as such, and program excellence was a secondary consideration. This, of course, meant that the cost of broadcasting, as compared to the present, was low.

Since then the public has been educated to expect a high degree of excellence in program material. When television is born, it must be born full-fledged as far as program material is concerned. This will mean great expense which must be assumed by the pioneers, Mr. Kaar contended.

It is not to be construed, from a survey of these problems, that commercial introduction of television will await their solution, Mr. Kaar concluded.

"Undoubtedly it will be commercialized in the near future," he said. "One fact is very clear—that further development must come through findings in the field, by actual trial."

### Robert Young To Direct Service on Evanoil Units

DETROIT—Appointment of Robert J. Young as service manager of the Evanoil division of Evans Products Co. has been announced by A. W. Shields, general sales manager.

Mr. Young was graduated from the engineering college of Marquette university, and for the past four years has been associated with Automatic Products Co., Milwaukee, as sales engineer.

### Virginia Public Service Co. Reports Show Dealer Sales Holding Up

ALEXANDRIA, Va.—Dealer sales of 280 electric refrigerators, 279 washing machines, and 78 electric ranges are among those reported in the territory of Virginia Public Service Co. during October, according to company officials.

Also included in the month's sales were 23 electric water heaters, 16 ironers, and 13 installations of commercial refrigeration equipment.

Dollar volume of dealer sales made during October amounted to \$111,669, according to the utility's figures.

Sales of the "big three" appliances—refrigerators, ranges, and water heaters—during the first 10 months of the year amounted to 7,380 units by dealers only this year, compared with sales of 8,878 units by dealers and the utility combined during the same period of last year.

This year's 10-month total included 6,220 refrigerators, compared with 7,539 in the same months last year; 846 electric ranges, as against 997 units last year; and 314 water heaters, as compared with 342 last year.

### Ritchie Has Model Kitchen

CHARLOTTEVILLE, Va.—Ritchie Electric Co., Hotpoint appliance dealer here, has installed an all-electric demonstration kitchen in its headquarters store here.

### Griddle Attachment Is Prime Feature of New G-E Roaster

BRIDGEPORT, Conn. — Greater capacity, and expanded services through a newly designed broiler-griddle attachment, are two of the principal features claimed for the new automatic roaster recently announced by General Electric Co.'s appliance and merchandise department here.

Roaster is designed to cook whole meals to individual taste, and is said to be able to bake, roast, pan broil, or fry. Vegetables may be boiled or steamed, in some cases waterless, in the covered vegetable pans. Special recipe book, giving operating instructions, accompanies the roaster.

The appliance, finished in cream-baked enamel, is equipped with a lifting rack, baking rack, three covered vegetable pans, and a roasting pan.

Roasting pan has been constructed at a height to allow for the desirable browning of roasts and fowl. Complete range of cooking temperatures, from 150 to 550° F., is controlled by an automatic thermostat, and the control switch has a signal light. The wire lifting rack has been designed with handles which automatically adjust it to rest on the upper edge of the cooking well, making use of the roasting and vegetable pans more convenient.

A hinge allows the roaster cover to be raised without completely

removing it, and any condensation will drip into the cooking well when the cover is raised. Necessary air circulation for the proper browning of roasts and fowl is controlled by a sliding cover vent.

Use of nickel-chromium resistance wire is said to employ heating elements making for rapid heating and durability.

For broiling, or for cooking pancakes, sausages, and similar preparations, there is a broiler-griddle attachment, consisting of a heating unit, a reflector with an adjustable hinge, a smokeless inset tray, and a drip pan. By using this smokeless inset tray, it was pointed out, there is no need to remove the pans from the cooking well while the broiler-griddle is in use.

This roaster, holding 18.2 quarts and large enough to roast a 19-lb. turkey, has a greater total capacity than the earlier model, it is said.

A steel constructed roaster stand, in similar finish, provides a permanent location for the roaster. The stand, 27 inches high, has a shelf for the broiler-griddle accessories.

### Stewart-Warner Will Make Hudson Radios

CHICAGO—Stewart-Warner Corp. will be exclusive manufacturer of auto radios for the 1939 Hudson automobiles, it has been announced. Two models of a self-contained unit will be made, and the radios will be sold through Hudson dealers and also will be factory-installed on several car models.

## THE BUYER'S GUIDE

SELL THE  
PEERLESS  
WALL TYPE  
UNIT COOLER

CHOICE OF 3 SIZES  
FOR REACH-IN BOXES  
AND SMALL  
REFRIGERATORS



### And Watch Your Profits Grow

Your customers will like the added storage space that this compact unit makes possible. Its steady, gentle stream of cooled, high humidity air permits proper refrigeration without profit-taking drying of products. Equipped with our spine or High Dispersion coil, the most efficient evaporating surface that has been developed.

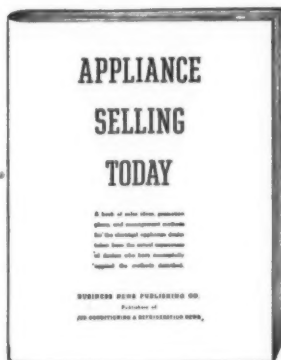
Ask Your Jobber for Details or Write for Catalog

PEERLESS OF AMERICA INC.

MAIN FACTORY • GENERAL OFFICES  
515 West Thirty-fifth Street, Chicago

New York Factory  
43-20 34th Street  
Long Island City  
Pacific Coast Factory  
3000 S. Main Street  
Los Angeles  
Export Division:  
P. O. Box 436, Detroit  
Michigan, U. S. A.

### APPLIANCE SELLING TODAY—A manual of sales ideas and promotion plans for distributors, dealers and salesmen



"APPLIANCE SELLING TODAY" is edited especially for the appliance distributor, dealer, and salesman.

This 128-page book is packed with hundreds of sales ideas, promotion methods, and merchandising plans tested and proved in actual use by dealers in all parts of the country.

"Appliance Selling Today" was written out of the actual experiences of electrical appliance dealers of all types and sizes, in all parts of the country. The reports show how such dealers have successfully applied various sales and management methods.

The records were compiled by staff members of Air Conditioning & Refrigeration News and its field correspondents, but the ideas and thoughts presented came from appliance dealers.

The editors of Air Conditioning & Refrigeration News believe that "Appliance Selling Today" is of greatest value to the dealer right now, for the reason that in no other period of appliance selling history has the dealer been so much "on his own."

"Appliance Selling Today" (Manual R-1) contains 128 pages, size 8 1/2 x 11, and costs \$1.00 in the United States.

Business News Publishing Company, 5229 Cass Avenue, Detroit, Michigan



### For All Commercial Applications—RANCO Type "G"

A SIMPLE, compact commercial control. Completely new — completely dependable. High capacity — 1-1/2 H.P. 110-220 V., A.C.; 3/4 to 1-1/2 H.P. 115-220 V., D.C. Made with stainless steel springs and toggle mechanism. Maintains accurate settings.

Ranco Type "G" Control is designed for all commercial applications. Important new features!

Write for Bulletin

Ranco INC.,  
Columbus, Ohio, USA



## CLASSIFIED ADVERTISING

**RATES:** Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

**PAYMENT** in advance is required for advertising in this column.

**REPLIES** to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS WANTED

**FACTORY REPRESENTATIVE**, engineering graduate, 14 years' successful experience in oil burners and refrigeration, seeks connection with a reliable manufacturer. Thoroughly familiar with New England and Middle Atlantic territory. Commission basis possibly acceptable. Box 1085, Air Conditioning & Refrigeration News.

**SERVICE** and installation man: Four years with nation's second largest Kelvinator distributor. Experienced on entire line to twenty horsepower. Served one season as junior engineer. Twenty-eight, married, four dependents, own car and tools. References from above mentioned firm. Go anywhere, work any make. F. M. BARRELL, 1512 Garland, Wichita, Kansas.

### BUSINESS OPPORTUNITIES

**LARGEST, LEADING** electrical appliance store in Alton, Illinois, with a trading population of 125,000, with exclusive franchises on leading lines of products, namely, household and commercial refrigeration products, air conditioning and heating equipment, stokers, oil burners and a full line of electrical appliances; also an active and paying service department; owner forced to leave city. For complete information write Box 1084, Air Conditioning & Refrigeration News.

**APPLIANCE, HEATING, air conditioning** and commercial refrigeration business, all leading lines, located in live Wisconsin city over 40,000 population in center of three large R.E.A. projects. Will sell all or part interest to active partner on inventory basis. No real estate, low rent. Box 1088, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

**DUE** to the strict policy of handling Servel equipment exclusively, MAJESTIC REFRIGERATOR CORPORATION is offering the trade for quick disposal one hundred assorted used machines received

as trade-ins. These machines are of various sizes and makes, including Frigidaires, Kelvinators, Copelands, etc. Priced low. Send at once for complete list. 333 West 52nd St., New York, N. Y.

**DEALERS AND REALTORS** make big profit on small investment, handling reconditioned refrigerators. We have 2,500 General Electric, Frigidaires, Kelvinators, Norges and Westinghouses, completely rebuilt (compressors, motors and controls overhauled) and re-sprayed to look like new. Send for free illustrated catalog listing 34 models, specifications and low prices. INTERBORO, 350 Pearl Street, Brooklyn, N. Y.

### REPAIR SERVICE

**GENERAL ELECTRIC** and Westinghouse hermetic units rebuilt. Guaranteed unconditionally for one year and returned to you refinished like new. Units are entirely disassembled in our large modern shop, tested through every step of production during rebuilding with the most complete test equipment for accurate work, then subjected to exhaustive running tests under actual operating conditions. Each unit measures to exacting standards after rebuilding. Prices \$30.00 on General Electric DR-1, DR-2, and Westinghouse; \$35.00 on General Electric DR-3. Quotations furnished on other models. Quick service—guaranteed work. REFRIGERATION MAINTENANCE CORP., 321-27 East Grand Avenue, Chicago, Ill.

**CONTROL REPAIR** service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

**DOMESTIC CONTROLS** repaired: Ranco pencil \$1.75, Ranco box \$2.00, General Electric \$2.00, Tag \$2.00, Cutler-Hammer \$2.00, Penn \$2.00, Bishop Babcock, \$2.50, Majestic \$2.50, Penn magnetic \$2.50, G. E. Frigidaire \$2.50. In business over 20 years. Our name is our guarantee. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th Street, New York City.

**ELECTRIC MOTOR** repairing, armature and stator rewinding on all refrigeration and air conditioning motors, A.C. or D.C. Pick-up and delivery service. All work guaranteed. Motors bought and sold. Burnt out motors bought. Prices on request. COMMERCIAL MOTOR SERVICE CO., 601 West 26th St., New York, N. Y.

### PATENTS

**HAVE YOUR** patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

## 8,970 Commercial Refrigeration Systems Sold To Distributors In September By 14 Manufacturers

The following report of commercial refrigerating and air-conditioning equipment sales for September, 1938 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association

(Nema) by the following 14 companies: Brunner Mfg. Co., Carrier Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div.

Nash-Kelvinator Corp., Merchant & Evans Co., Norge Div. Borg-Warner Corp., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

### SALES FOR SEPTEMBER, 1938

	Domestic		Canadian		Other Foreign		Total World	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete.....	126	\$ 9,038	1	\$ 97	19	\$ 1,414	146	\$ 10,549
2. Pressure Water Coolers—Complete.....	750	81,381	14	1,122	115	12,039	879	94,542
3. Water Coolers—Low Side Only.....	90	6,603	3	152	1	58	94	6,813
4. Ice Cream Cabinets—Complete.....	937	150,555	11	1,621	158	18,673	1,106	170,849
5. Ice Cream Holding Cabinets Only (Remote).....	106	15,454	5	554	7	1,024	118	17,032
6. Bottled Beverage Coolers—Complete.....	789	85,865	22	1,783	54	5,848	865	93,496
7. Beverage Coolers (No High Sides).....	98	10,562	1	43	22	1,155	121	11,760
8. Milk Coolers—Complete.....	2	258	.....	.....	.....	.....	2	258
9. Milk Cooling Cabinets (No High Sides).....	.....	.....	.....	.....	.....	.....	.....	.....
10. Self-Contained Air Conditioners Air Cooled—All Sizes.....	503	64,269	.....	.....	170	35,578	673	99,847
11. Self-Contained Air Conditioners Water Cooled—Under 2 Hp.....	7	1,267	.....	.....	50	10,136	57	11,403
12. Self-Contained Air Conditioners Water Cooled—2 Hp. and Up.....	48	26,450	1	600	23	13,659	72	40,709
13. Air Conditioners—Central Stations 5-Ton Capacity and Over.....	103	73,552	1	207	5	5,192	109	78,951
14. Air Conditioners—Floor Type (No High Sides).....	41	19,007	.....	.....	12	6,445	53	25,452
15. Air Conditioners—Ceiling (Cooling Only—No High Sides).....	66	9,277	.....	.....	25	2,882	91	12,159
16. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides).....	7	3,310	.....	.....	2	1,120	9	4,430
17. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces).....	63	13,876	.....	.....	.....	.....	63	13,876
18. Condensing Units Less Than 1/2 Hp.....	739	39,120	15	883	186	11,163	940	51,166
19. Condensing Units—1/2 Hp.....	1,214	91,315	30	2,835	232	20,972	1,476	115,122
20. Condensing Units—1/2 Hp.....	842	86,697	39	4,658	139	16,684	1,020	108,039
21. Condensing Units—3/4 Hp.....	536	74,364	16	2,405	111	16,800	663	93,569
22. Condensing Units—1 Hp.....	329	51,253	10	1,913	50	8,882	389	62,048
23. Condensing Units—1 1/2 Hp.....	176	35,794	9	2,043	31	6,580	216	44,417
24. Condensing Units—2 Hp.....	117	26,973	.....	.....	21	4,883	138	31,856
25. Condensing Units—3 Hp.....	78	25,838	4	1,117	30	7,028	112	34,483
26. Condensing Units—5 Hp.....	35	15,616	.....	.....	14	7,009	49	22,625
27. Condensing Units—7 1/2 Hp.....	19	12,696	.....	.....	8	5,154	27	17,850
28. Condensing Units—10 Hp.....	17	12,527	.....	.....	6	4,995	23	17,522
29. Condensing Units—15 Hp.....	24	21,299	.....	.....	5	4,300	29	25,599
30. Condensing Units—20 Hp.....	17	18,432	.....	.....	1	904	18	19,336
31. Condensing Units—25 Hp.....	15	18,341	.....	.....	1	1,410	16	19,751
32. Condensing Units—30 Hp.....	10	15,881	.....	.....	1	1,365	11	17,246
33. Condensing Units—40 Hp.....	17	36,022	.....	.....	.....	.....	17	36,022
34. Condensing Units—50 Hp.....	25	52,852	.....	.....	1	1,900	26	54,752
35. Total—Lines 18 to 34 Inclusive.....	4,210	635,020	123	15,854	837	120,529	5,170	771,403
36. Total—Lines 1, 2, 4, 6, 8, 10, 11, 12, 35.....	7,372	.....	172	.....	1,426	.....	8,970	.....
37. Commercial Evaporators (Not Reported Above).....	1,912	70,839	64	2,684	508	16,502	2,484	90,025
38. Air-Conditioning Evaporators (Not Reported Above).....	148	25,187	.....	.....	3	273	151	25,460
39. Total Commercial & Air Conditioning.....	.....	\$1,301,770	.....	\$24,717	.....	\$252,527	.....	\$1,579,014

## Nema September Refrigerator Sales To Distributors Total 72,050 Units

The following 17 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for the month of September, 1938:

Apex Electrical Mfg. Co., Crosley Radio Corp., Edison General Electric Appliance Co., Inc., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Johnson Motors Co., Kelvinator

Div. Nash-Kelvinator Corp., Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Sparks-Withington Co., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co.

The sales of the reporting companies include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

### SALES FOR SEPTEMBER, 1938

	Domestic	Canadian	Other Foreign	Total
<b>Lacquer (Ext.) Cabinets Complete</b>				
1. Chest.....	172	.....	343	515
2. Less than 3 cu. ft.....	.....	76	27	103
3. 3 to 3.99 cu. ft.....	2,279	63	1,510	3,852
4. 4 to 4.99 cu. ft.....	12,780	682	4,600	18,062
5. 5 to 5.99 cu. ft.....	8,833	497	2,197	11,527
6. 6 to 6.99 cu. ft.....	20,064	281	1,255	21,600
7. 7 to 7.99 cu. ft.....	4,345	38	356	4,739
8. 8 to 8.99 cu. ft.....	2,681	18	221	2,920
9. 10 to 12.99 cu. ft.....	6	.....	.....	6
10. 13 cu. ft. and up.....	1	.....	.....	1
11. Total Lacquer.....	51,161	1,655	10,509	63,325
<b>Porcelain (Ext.) Cabinets Complete</b>				
12. Up to 4.99 cu. ft.....	15	1	54	70
13. 5 to 5.99 cu. ft.....	720	8	189	917
14. 6 to 6.99 cu. ft.....	3,286	4	140	3,430
15. 7 to 7.99 cu. ft.....	851	2	67	920
16. 8 to 8.99 cu. ft.....	1,236	2	72	1,310
17. 10 to 12.99 cu. ft.....	195	1†	12	206
18. 13 cu. ft. and up.....	303	1	35	339
19. Total Porcelain.....	6,606	17	569	7,192
20. Total—Lines 11 and 19.....	57,767	1,672	11,078	70,517
21. Separate Systems 1/4 hp. or less.....	163	231	516	910
22. Separate Household Evaporators.....	55	451	117	623
23. Total—Lines 20, 21, and 22.....	57,985	2,354	11,711	72,050
24. Condensing Units 1/4 hp. or less.....	322	319	253	894
25. Cabinets—No Systems.....	19	66	6	91
Index Value* of Total Dollar Sales.....	120.0	310.0	142.0	125.0

\*Based on weighted sales for 1934, 1935, and 1936. †Includes sales and credits.

### Rose & Woodall New Carolinas Dealer

DUNN, N. C.—Rose & Woodall Electric Appliance Store has been opened here with Grover C. Mitchell, Jr. as manager. The store handles Frigidaire and Easy appliances.

### Tecumseh Products Moves New York Office

NEW YORK CITY—Tecumseh Products Co., Tecumseh, Mich., manufacturer of compressors and condensing units, has moved its New York office to 245 W. 55th St.

## 520 Appliances Sold In 4 Weeks of Georgia Drive

ATLANTA—Sales of 520 appliances were reported by Georgia Power Co. in the first four weeks of its fall campaign on electric ranges, water heaters, and roasters.

Range and water heater sales were close together, totals being 292 ranges and 209 water heaters. Roaster sales during the period amounted to 42 units.

## NEW YORK HEADQUARTERS

• The Belmont Plaza because of its convenient location is hotel headquarters for leading men in the air conditioning and refrigeration field. You'll always meet someone you know here.

Just a few blocks from Grand Central Terminal and convenient to the midtown business district, at the Belmont Plaza you're right in the center of things.

Two excellent, popular-priced restaurants—the Pine Room and the famous Glass Hat, one of New York's smartest cocktail, dining and dancing rooms.

800 spacious well appointed rooms, each with both tub and shower, radio and full length mirror from \$3.00.

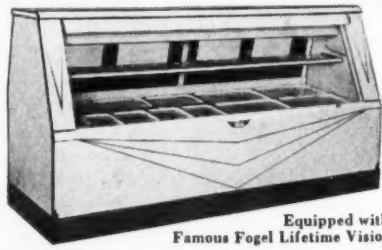
### HOTEL

## Belmont Plaza

Lexington Ave. at 49th St., New York  
John H. Stember, Manager  
National Hotel Management Co., Inc.  
Ralph Hitz, President



## WIDEST VARIETY OF MODELS



Equipped with Famous Fogel Lifetime Vision

There is a Fogel model especially designed for each type of application.

Therefore—Fogel dealers have a distinct advantage in being able to sell the customer exactly what he needs, instead of merely the "nearest thing."

Inquire today about our full line of refrigerated food storage and display equipment. Interesting distributor proposition to qualified firms.

**FOGEL REFRIGERATOR COMPANY** Since 1899  
16th & Vine Sts., Phila., Pa.



Most efficient because of the exclusive Henry vacuum drying and pressure sealing process. Escape of dehydrated air when seal cap is removed proves unit is absolutely dry! Soldered brass shell with dispersion tube and dehydrant compression spring. Choice of 5 dehydrants.

**HENRY VALVE CO.** 1001-19 N. SPALDING AVE. CHICAGO, ILLINOIS  
STOCKED BY LEADING JOBBERS

## MILLS COMPRESSORS

for Commercial Use

Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

## A tight system calls for FITTINGS THAT WILL STAY TIGHT

IMPERIAL S. A. E. flared fittings have been setting a mighty fast pace in the air conditioning and refrigeration field... and their rapid acceptance by installation and service men is based on results. Imperial fittings are tight when the job is finished and they stay tight.

Write for catalog covering complete listing of sizes and prices.

IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago



**S. A. E. FLARED FITTINGS**  
Brass forged nuts, tees, elbows and crosses—will not crack. Heavier and stronger than standard—non-porous—no seepage or season cracking. Tees and elbows have flats for wrench.

**IMPERIAL Fittings** ORDER FROM YOUR JOBBERS  
VALVES • TOOLS • CHARGING LINES • FLOATS • DEHYDRATORS • STRAINERS



## Specialty Selling Methods

### Home Service Dept. Important Because It Makes & Keeps Customers Satisfied

SOUTH BEND, Ind.—Home service workers sell not, neither do they service, equipment—yet they perform an important function as auxiliaries to both sales and service departments of appliance distributors, dealers, and electric utility companies, Miss Anna Louise Culp, home service representative of the Elkhart (Ind.) division of Indiana & Michigan Electric Co., told a recent meeting of the utility's home service department here.

Primarily, Miss Culp declared, the home service department is important because it aids greatly in molding public opinion and customer acceptance of the product.

"Most important to an electric company," said Miss Culp, "is the sale of more kilowatt-hours. As equipment is improved often the kilowatt consumption is decreased, making it necessary to increase the use of appliances in order to maintain or increase the load.

"The home service department, by selling the use of electricity to the home maker, plays a very important part in the load-building program.

#### BUILDING UP LOAD

"Sale of appliances, particularly ranges and water heaters, is very important in increasing the amount of current used. By giving the home maker a better understanding of the care and operation of the appliance, and also by the sales promotional activity of the department, a desire is created among non-users for more equipment and more modern equipment. Creation of desire for a product results in sales.

"The home service department is closely allied with the advertising department in this respect. It is a well-known fact among advertising experts that a satisfied customer is one of the best and least expensive means of advertising. One of the most important phases of the department's work is to teach the operation of ranges and other appliances so that the customer will be satisfied, hence a booster.

"Customer goodwill is also important. A department that will act as a clearing house for the problems relating to the mechanics of home making creates a feeling of confidence in the company.

"There is also a definite value to other departments of the company, particularly the merchandising and service departments. Salesmen trained by the home service department give not only the theoretical knowledge of a product, but the practical use as well.

#### EXPLAINING OPERATION

"Through cooperation with the service department many customer difficulties may be remedied. Often the range or other appliance is blamed for poor results when it is not at fault. Often by again explaining the operation and talking over the problem with a home service worker, the trouble is remedied without a visit by the service department."

Miss Culp added that if the appliance really is at fault, findings of tests may be forwarded to the service department. Also, meetings similar to those held by the home service department for the sales division are beneficial to the service department.

Various types of group demonstrations and cooking schools are conducted in sales promotional work, Miss Culp said, with the common purpose of creating a desire for the merchandise being displayed or used.

#### CONDUCTING MEETINGS

The home service department is trained and equipped to conduct such meetings efficiently, Miss Culp pointed out.

"Work is often done in the schools and 4-H Club groups," she stated. "In this manner a good basic knowledge of the modern methods used with modern electrical equipment is given to the customer of tomorrow."

The basic foundation of the home service department, Miss Culp explained, is service. Sales are not

made directly by a member of the department, but the ultimate sale does depend upon this member.

"Often, after the equipment has been installed, the user becomes skeptical as to its worth to her," Miss Culp went on. "She must be re-sold. This is the job of the home service worker."

#### SERVICE IS KEYNOTE

"To insure satisfactory customer relations it is essential to have service for a keynote," said Miss Culp. "The home service department serves first of all by giving complete instructions in the use and care of the appliance, thereby insuring efficient operation. Recipe and bulletin service keeps the customer posted on new ideas and methods. Aid in planning menus is another service given.

"That the home service department is spoken of as non-productive" Miss Culp concluded, "is a mistaken idea. Sales promotional work—creating the desire for new merchandise—is important to any company merchandising.

"Whether or not a customer keeps the range depends, in many instances, on the home service worker. Instruction given to the new customer is essential for her understanding and enjoyment of operation.

"The contact with all users, keeping them up-to-date on methods and procedure, results in keeping the range in use, or replacing an old style range with a more modern one."

### G-E Book Will Aid Dept. Stores' Holiday Drive

NEW YORK CITY—A special book, "101 Ways to Ride in on G-E's Christmas Promotion," has been prepared by General Electric for the use of department stores who are cooperating with the company's special holiday drive for electrical appliance business.

This material is separate from that being furnished to distributors and dealers who are tying-in with the campaign's key theme, "For a practical person with a sentimental side." It has been developed in the form of magazine advertising, newspaper copy, spot broadcasts, billboards, window displays, floor displays, counter cards, tags, and packaging.

Recognizing that most department stores, especially the larger ones, like to individualize their promotion efforts, material and ideas in the G-E presentation are designed for flexibility.

Circulations of the national publications in which the G-E Christmas campaign appears will be broken down into trading areas for the benefit of those stores who wish to capitalize on this publicity.

Three window backgrounds, each lending itself to a variety of appliance display treatments, are being made available through W. L. Stensgaard, Chicago. Sample developments of these backgrounds, as well as numerous other window and floor display ideas, will be offered to merchants. Many of the floor displays have been specially designed to fill islands, corners, and odd-shaped floor spaces otherwise little used.

Rough layouts and copy slants have been prepared for newspaper advertising, to appear under the signature of each store. These advertisements are designed to appeal to all men caught in the customary Christmas quandary, and feature such heads as "Ever Get Lost in a Fluffy Ruffly Department?"

Realizing that the feminine heart demands sentimentality just as the feminine mind insists upon practicality, G-E has worked out a plan to take care of last-minute-shopping husbands who rush in at 5 o'clock Christmas eve and expect to have a refrigerator installed before dawn on Christmas day. Take the order, recommends G-E, and deliver a dozen roses along with a card announcing the gift.

### Prize-Winning 'Letter To Father' Tells How Modern Kitchen Aids Housewife

HURON, N. D.—Winning paper in a kitchen planning contest conducted by Northwestern Public Service Co. here for members of its own organization was written in the form of a "letter to father" by Herbert Schulte of the company's Aberdeen, S. D. division.

Mr. Schulte's paper was selected from 44 entered in the contest, and earned him a cash prize.

Designed to educate company employees in kitchen planning fundamentals, the contest required that each contestant write his ideas as to the principal advantages to the housewife of a planned, modern kitchen. Each entrant also was required to indicate on a standard floor plan the arrangement of the kitchen equipment, and to show the amount of storage space that should be provided in a home of four bedrooms.

Mr. Schulte's winning letter is as follows:

Dear Dad:

In the last letter I received from Mother she states that you are either going to remodel the kitchen or purchase a new car. Before you make a final decision, I should like to make a few suggestions about the kitchen, and maybe you can see fit to drive the old car another year.

The combined features of the new modern kitchen would make the 55% of Mother's waking time that she spends there more joyful; they would cut down the meal mileage by saving her thousands of steps every day in preparing meals and cleaning up thereafter; they eliminate drudgery by making every kitchen task easier; and give her more leisure time. The electric refrigerator and range will make possible savings in food bills, and the wholesome meals prepared therein will improve the family health and appetite.

#### INCREASE PROPERTY VALUE

With the better light incorporated in the kitchen design, there will be less eye strain and fewer chances for accidents. Besides the certain amount of pride you and Mother will get from living out of the new kitchen, it will definitely increase the general value of the whole property.

I am enclosing a sketch I drew from memory of the general outline of the old kitchen, and have added the new features. I will briefly explain the general idea, and from that I hope you will get a contractor to perpetuate the idea.

In the new kitchen we have three major centers of operation, similar to your factory. The food is brought in and placed in Center (1) where it is stored either in cabinets or in the refrigerator. From there it passes on to the second or Cleaning Center, which includes sink and dishwasher. After being cleaned it goes on to Center (3), where it is prepared, cooked, and served with the help of the electric range.

#### AREA OF CABINETS

The area of the upper cabinets is determined by the number of bedrooms in the house, which in this case is four. We assume that four bedrooms accommodate five persons, and allow six square feet of upper cabinet space for each person, with additional space for two guests which will make forty-two (42) square feet of upper cabinet space in this kitchen. The lineal space available in this design makes it necessary to build the wall cabinets three and a half feet high.

The base cabinets should occupy from seven and a half to nine lineal feet of space, excluding that provided by the sink.

I have not included a breakfast nook in the design because of the rather large size required to accommodate five people, but the planning table can be used in case one or two early risers do not wish to wait to dine with the rest of the family.

#### LIGHTING PLANS

The three windows will undoubtedly furnish all the light necessary during the day, but to provide for night lighting I have a general ceiling fixture in the center of the room, and another over the sink, with wall lights under the upper cupboards at the working ceiling.

The warm air register can either be installed next to the floor or seven feet up, and if an exhaust fan is

desired, it can be put above the window over the sink.

A swinging door to the dining room will make passage easy to and from the kitchen, and a right-hand door on the refrigerator would be very essential.

It would be well to finish the wall with some light neutral color—maybe a base line of tile design, and the floor might be covered with a checked linoleum, which would easily match Mother's Fiestaware.

I hope, Dad, that you can see the practicability of such an arrangement, and that Mother's next letter will state that construction is under way.

HERBERT SCHULTE

### Appliance Men Named To Nema Posts

CHICAGO—Several men representing companies in the electric refrigeration and appliance industry were named to executive posts in National Electrical Manufacturers Association during a recent meeting here.

C. E. Swartzbaugh of Swartzbaugh Mfg. Co. and N. G. Symonds of Westinghouse Electric & Mfg. Co. were named vice presidents, and also will hold posts on the association's executive committee.

Named to Nema's board of governors for three-year terms were Gerard Swope, president of General Electric Co.; G. S. Crane, vice president of Cutler-Hammer, Inc.; Howard E. Blood, president of Norge division, Borg-Warner Corp.; and R. J. Russell, vice president and secretary of Century Electric Co.